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FIVE YEARS OF Bulk Handling Are Evaluated in This Issue. Articles Begin on Page 10.

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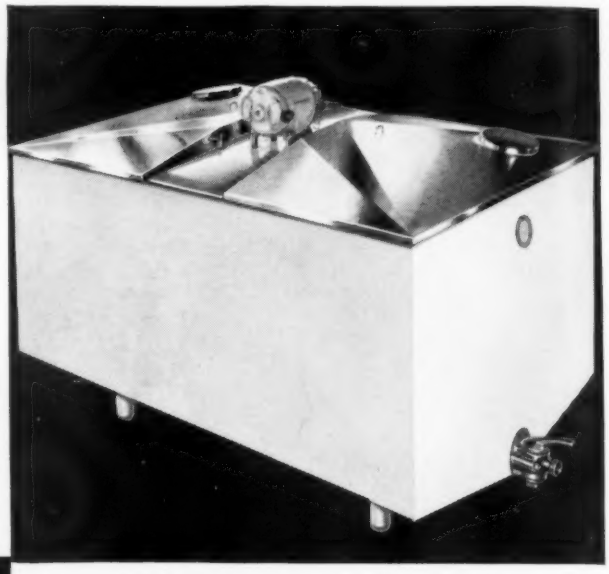

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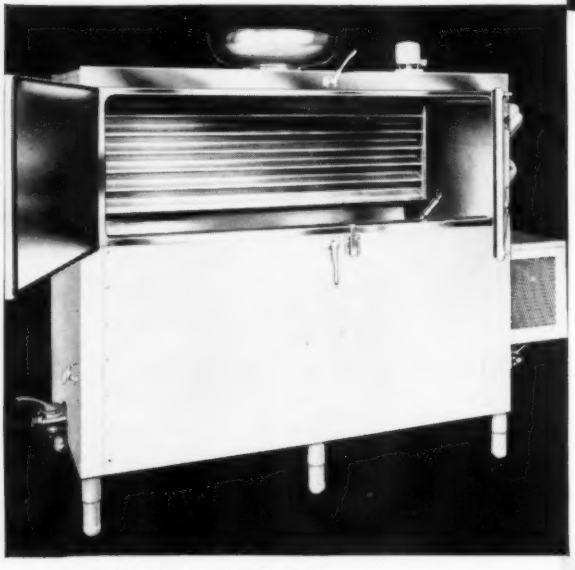

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Where Do We Stand After
FIVE YEARS OF BULK HANDLING

By NORMAN MYRICK

Five years ago, in the August 1948 issue of the American Milk Review, we had the privilege of publishing the first story on a bulk milk handling operation outside of the State of California. That story dealt with the pilot route set up by A. C. Fisher and Emerson Sartain of Bryant and Chapman, Hartford, Connecticut. With this issue, five years later, we bring you a summary of the bulk method of handling milk as it stands today.

On this and subsequent pages, you will find a brief recapitulation of what has been learned over a half decade of experience with farm tanks. In addition, you will find new material published for the first time in a dairy trade journal. This material includes methods of financing farm tanks, health regulations, a code of weights and measures, 3-A standards for construction, an exhaustive study of the economics of farm tanks, and some fascinating new details developed by individual operators.

We are a bit proud of this issue. We think you will find it valuable.

The Editor.

Numbers—There are 6,550 farm tanks in use in the United States today. This figure is accurate to within 3 per cent.

Concentration—About 70% of the farm tanks in the nation are in the 3 West Coast States. California has 3200, Oregon 150, and Washington 1000. Wisconsin has approximately 450. Massachusetts and Connecticut markets are supplied by 250 farms having tanks. Northern Virginia and Maryland farms shipping to Washington, D. C. have about 335 tanks. See pages 18-22 for details.

Interest—Wide variation in interest is apparent, ranging from avid enthusiasm in Washington, where tanks are going in at the rate of almost 1000 a year, to other States where no tanks are anticipated for at least 5 years. In general, first enthusiasm appears to have been replaced by more sober consideration. Interest in farm tanks is great, but producers and dealers are moving with caution.

Farmer's Attitude—Biggest appeal is economic. Saving in hauling costs under every other day pickup is most significant. Higher butterfat test and larger volume may contribute some, but is variable. Reduction in hauling charge and premium for tank milk because of quality are two big sources of gain. Farmer also likes control of milk (*i.e.*, paid on basis of weight and test at the farm). Another factor is religious. Every other day pickup enables farmers and, in some cases, dealers to observe the Sabbath. Social status is also a factor. "The Joneses have a farm tank. Why don't we have one?" Money speaks with the loudest voice, however.

Dealer Attitude—General opinion appears to be that bulk handling provides better quality milk, better producer relations, allows for a more flexible operation, and affords real potential savings. Also it appears to be pretty generally agreed that there is little monetary saving to the dealer until all his milk is in bulk. A split operation, even though the bulk system may be more economical, does not result in lower over-all costs. See page 26 for more detailed discussion.

Small Producer—This is a major problem that has not yet been solved. Every other day pick-up helps but does not solve the problem. Some say bulk handling means end of small producer; others say small producers are such an important factor that failure to solve the problem will seriously limit, if not wreck, bulk handling development. Probably both views are extreme, but as of now the small producer is a major difficulty as far as farm tanks are concerned.

Premiums—Premiums for tank milk vary from nothing to 25c a hundredweight. Most premiums are between 5c and 15c a hundredweight. This is not for butterfat; it is purely a premium for tank milk. Premium idea is highly developed in Washington, which is one reason for enthusiasm. Some dealers are very slow to pay premiums. Best philosophy expressed by dealer who says, "There are definite potential savings for both producer and dealer, but we feel very definitely that the possible savings made by each of these groups belongs to that group. Jockeying for position in this regard has tended to hold up development of a program which has great potential benefit to the industry as a whole."

Premiums express two things; lower costs and higher quality. Lower hauling costs, for example, are expressed either in terms of lower hauling rates or in terms of higher prices, *i.e.*, premium milk. Primarily premiums are savings in handling costs that are passed back to producers. Highest premium we have encountered was 25 cents a hundredweight.

Prices—Prices vary according to size and type. For popular medium sizes, complete cost, including installation and financing charges, range from $1,900 to $2,400 per tank. Some producer organizations looking for cheaper tank, but despite some reduction in costs as manufacturers have solved initial production problems and despite prospects of greater volume, there does not appear to be much possibility of a cheap tank, that is a tank selling for $900 to $1,000.

3-A Standards—Standards for farm tanks were promulgated by the International Association of Milk and Food Sanitarians, the United States Public Health Service, and the Dairy Industry Committee in June of this year. The standards specify in detail materials, fabrication, and measuring devices. Installation is discussed but not in detail. For more on this subject see page 50.

Tanks—Common sizes, in gallons, are 100, 150, 200, 300, 400, 500, 600, 800, and 1000. Most popular sizes are 100, 200, and 300 gallons. Two types predominate; the cold-walled tank with direct expansion refrigeration and the cold-walled tank refrigerated with ice water or an ice bank. Some other smaller and larger sizes made but are not as common as those listed above.

Installation—Farm tanks usually installed by local refrigeration man. Most health department regulations require 2′ clearance from walls and prohibit location over floor drain. Tanks must be "in level" on concrete floor or slab. Some trouble from frost heaves which throw tank out of level. Plumb line and level edge provided with tanks in order to check level. Weights and measures code gives detailed specifications on this. Highly desirable that local man do installation, from point of view of subsequent service requirements.

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Milk Houses—No new specifications for milk houses. Remodeling is sometimes necessary in order to accommodate tanks. Also washing requirements make additional facilities necessary in some instances. If producer has a good milk house to begin with, remodeling is seldom necessary.

Plant Operation—Bulk handling affords flexible operation, many variations. One dealer, for example, collects in the afternoon, uses tank truck as a holding tank, does not have a regular holding tank in the plant. Other dealers pump directly to clarifier to holding tank. Another firm has milk come in, pasteurizes immediately, then cools product down to a goal of 34° so that milk goes into the container at that temperature. Gives milk a longer keeping quality in the stores. New York does not apply the 10 A.M. deadline for receiving milk at the plant for cooled milk. Few plants, however, have been able to convert completely to bulk handling.

Pipe Line Milkers—Farm tanks and pipe line milkers are a natural combination. California and Florida are very progressive in this respect. Swaner Farms Dairy in Iowa City has done brilliant work in setting up closed systems. Some large farms owning their own tank trucks put milk from pipe line over a cooler and then into truck which serves as holding tank. This procedure is obviously limited to very large farms.

Power Requirements—Some reports indicate that in certain rural areas peak load requirements of farm tanks place heavy strain on power. This problem apparently varies with localities and power supply. It may or may not be serious.

Financing—Wide variation here. Manufacturers finance tanks in some instances. Individual farmers do own financing in some cases. Milk dealers and cooperatives sometimes finance tanks in order to get benefit of lower price due to large purchases.

Glenn T. Nelson, Oregon State College economist, cites three examples of financing farm tanks: "One of the cooperatives purchases the tank and installs it. The producer agrees to a deduction of 20 cents per hundredweight of milk for financing. For this, the producer receives a certificate of equity in the entire program. He does not get title to a specific item of equipment, but holds a revolving fund equity certificate representing his share of all the facilities. This method of financing makes it possible for tenants to have tanks without making a large investment in equipment.

"A second organization, a privately owned company, buys the tanks in carload lots for the producers. The wet boxes which had been used in cooling cans are taken as a down payment on the tank since the company has a market for them. The company then makes arrangements with a government agency for the producers to pay the balance over a period of 36 months.

"The third organization leaves the decision as to the make and size of the tank to individual farmers. If the farmer requests financial aid, representatives of the dairy plant make the necessary arrangements with a bank. No down payment is required. The tanks are paid for over a period of 36 months and interest is charged at the rate of 4½ per cent on the unpaid balance."

One of the best financing systems is printed on page 42.

Farm Tank Sales—A huge potential market for tanks has attracted many manufacturers. About twenty firms actually are making farm tanks, others considering but not yet in. Two or three firms formerly making tanks have stopped manufacturing. Some now manufacturing are taking a long, hard, second look. Others feel potential is still there and point to continually rising sales curve. However, competition is keen. Biggest problem is distribution. It is not sound for manufacturer to deal directly with individual farmer because of high sales costs involved. Prefer to sell a block of tanks to a milk dealer or a co-op. Possibility of using a local equipment dealer as a distributor is being explored by several firms. Repeat, selling directly to farmer has no appeal to the majority of manufacturers. Too expensive.

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Sampling—General practice is to have the trucker a licensed weigher and sampler. This is usually incorporated into regulations of State and municipal authorities. In some cases, modifications of requirements have been made, such as in New York City milkshed. Here the dairyman using a farm tank agrees to four physical examinations of the herd a year instead of one. The tank truck operator takes a weekly bacteria count under more rigid conditions than required for a can operation. In addition, the milk company agrees to make a monthly inspection of the farm.

Weighing—One of the most satisfactory features from the farmer's view point continues to be the fact that he is paid for the milk that is in his tank on the basis of measurement taken on the premises. Measurement is determined either by a calibrated metal measuring rod or by direct reading of a transparent gauge. In California and Oregon, meters are authorized, but not used. Measuring rods and gauges are calibrated for each individual tank and bear identification in the form of serial numbers that associate them with a specific tank. A recent conference of Weights and Measures officials held in Washington in May of this year heard a report and recommendations from a committee appointed to study farm tanks. Most startling recommendation advocated buying milk by volume under bulk handling rather than by pounds. Committee insisted Weights and Measures officials could certify tanks only on volumetric basis. They could not certify that the volume thus certified equalled a given number of pounds. For further details see page 44.

Meters—There has been a great deal of talk about a meter as a device for measuring milk in farm tanks. Both California and Oregon refer to meters in their regulations governing farm tanks. When these regulations were formulated there was a feeling among manufacturers that a meter capable for use in handling milk could be developed. However, no such metering device has been found but reference remained in the regulations in the hope that some day a satisfactory meter would be perfected. The National Conference on Weights and Measures does not know of any meter for measuring milk. One tank manufacturer questioned the desirability of a meter even if there were one. His point was that the meter would be on the truck and that fact would remove one of the best features of the farm tank from the farmer's point of view; namely that he is paid for the amount of milk *in the tank* under the present system.

Every Other Day Pickup—This has proven to be feasible in a number of markets. Tests have shown no deterioration in bacteria counts, although in at least one major market Health Department officials are not sympathetic to every other day pickup. E.O.D. pickup has the green light in Connecticut and in Washington, as well as in some other States. It is a very important factor because of the reduction in hauling costs that it affords. Many tanks being installed now are of such a size that they can hold two days' production.

Quality—Biggest feather in bulk handling's cap is quality. Quick and low temperature cooling plus stainless steel contact surface plus better work on the part of the producer are main reasons. Some remarkable records for low counts have been established. Fears that farmer would lose a whole tank of milk rather than one can if bad milk is present, or that bad milk dumped in with good would contaminate a tank load, etc., have not materialized. We have found few instances where a tank of milk was refused. In these cases, the milk was usually salvaged and used as manufactured milk. It seems to be a fact that the farmer does a better job, exercises more care when he is faced with the possibility of losing a tank full of milk rather than a can.

Setting Up Routes—A difficult job. Usually it means taking big producers. Problem is how to handle small producers. Case on record where dealers have swapped producers, one large producer for several small producers, in order to solve problem. Some dealers who are in a position to do so have said arbitrarily, "As of such and such a date, we will take only tank milk." Most dealers do it gradually, looking toward the day when they can have a complete route or routes.

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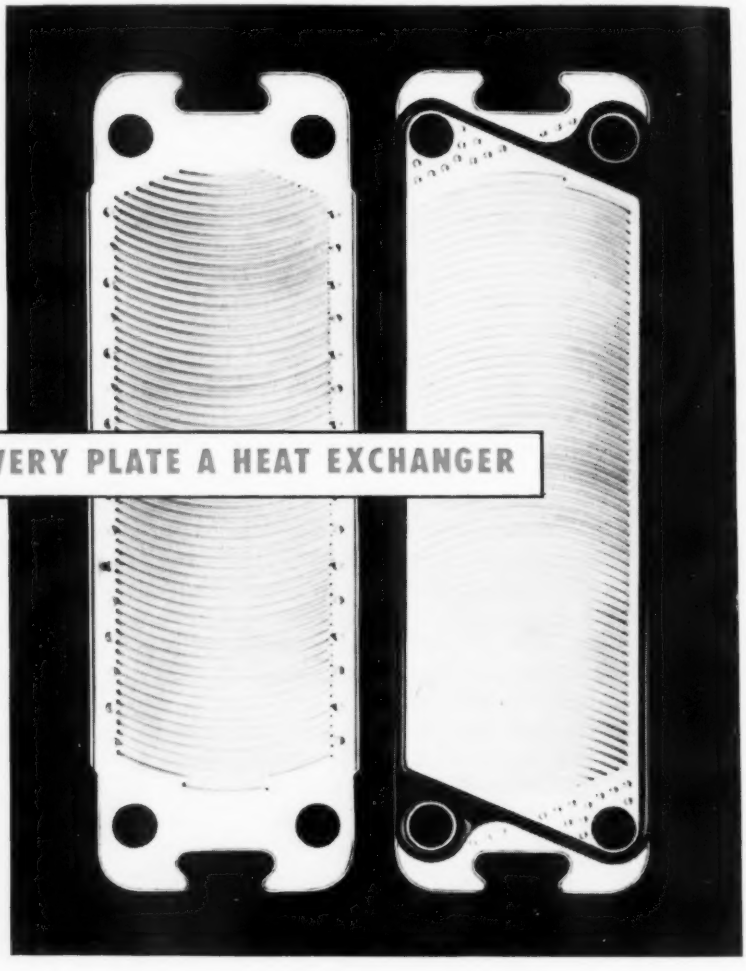

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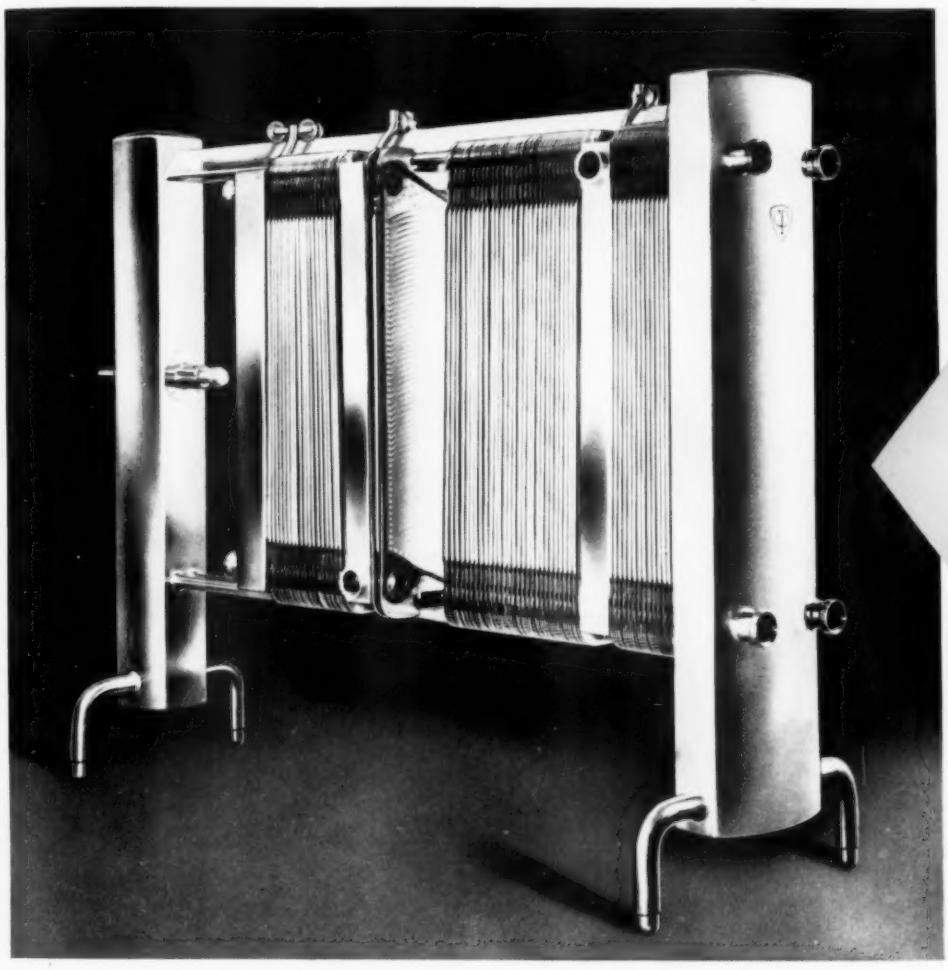

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Tank Trucks—Trucking is usually done by independent hauler, who carries heavier load at lower cost. Some firms are making tankers equipped specifically for bulk handling. Pumping from farm tank to tank truck is done by electric pump on truck. Power taken from outlet on milk house. Health authorities satisfied except for transfer hose. Do not like fact that milk remains in hose from farm to farm. Both Tygon and rubber transfer hose used. Fears that tankers could not negotiate country roads in winter and spring have proved to be groundless. Experience has shown that a tanker can go wherever other trucks go. No difficulty from weight limits, except in a few isolated cases. Problem of unequal loads due to production variations met by different means. Some operations involve different size trucks. Others simply pick up more or less often according to production. Others expand or contract routes according to production.

Country Receiving Plants—Some country receiving plants have been eliminated, others have not; varies according to situation. Many dealers feel that this is a source of real saving. Future is not at all clear on this point.

Length of Route—120 miles round trip from plant appears to be close to present economical limit. Will vary, of course, with size of load, number of stops, etc. Temperature loss insignificant over that distance.

Truck Driver—Trend is to have the truck driver a licensed weigher and sampler. Requires a higher type man and a more expensive man than ordinary trucker. With him rests decision whether to accept or reject milk. He exercises some functions of fieldman, procurement man, and inspector as well as truck driver. No room for inferior personnel. Wisconsin says, "Tank transport operators and/or associates shall be considered key men in bulk milk handling operations."

Government Control—State and municipal governments are exercising control over bulk method wherever it becomes prominent. Control is in the form of regulations and permits. Some States require permits of farmer, dealer, and hauler.

Federal Orders—Recognition of pricing problems arising out of bulk handling have been expressed in testimony at Federal Order hearings in New York and Seattle. Problems vary but basic consideration appears to be a desire to gain consistency in pricing when milk is used in different ways in the course of day-to-day operation. For example, in a large operation milk may go to one plant today, another plant tomorrow. The two plants may be under different orders or one may be under an order and the other not. One suggestion proposes that price of bulk milk be governed by price prevailing at point of origin. Also proposes a premium for tank milk.

Health Departments—When thoroughly acquainted with bulk handling, Health Departments and sanitarians find the method satisfactory—in many cases enthusiastically so. Some State and metropolitan Health Departments are still studying the method through trial routes. Both Chicago and New York give only a cautious "O.K." Twelve States have detailed and specific regulations covering bulk handling or are in the process of writing such regulations.

Experimental Work—A great deal of study is being devoted to farm tanks by colleges, health departments, and private firms. Universities and experiment stations in Wisconsin, Oregon, Washington, North Carolina doing work on bulk handling. New York City, Chicago, and Austin, Texas are health departments known to be studying the method. Doubtless many others are doing the same. Manufacturers and steel makers, particularly United States Steel, are doing excellent work in this respect. Glenn T. Nelson of Oregon State College at Corvallis, Oregon has written an excellent summary of a study made in that State.

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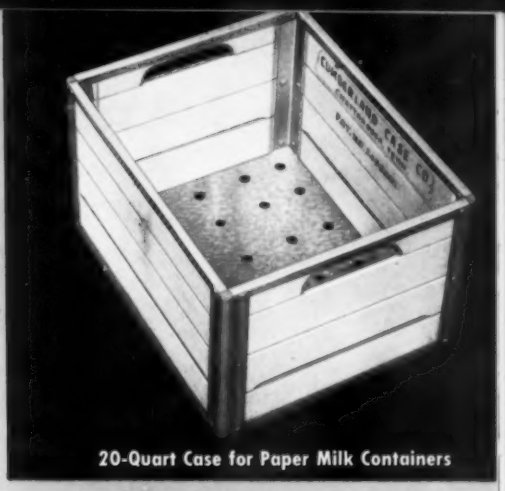

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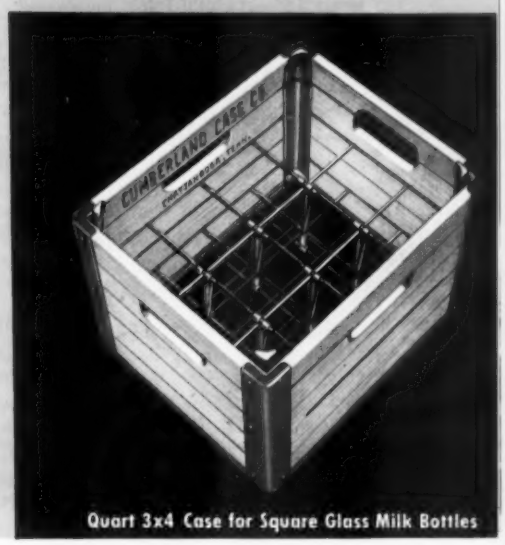

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NOW 6550 FARM HOLDING

Majority of Tanks on West Coast — East and Midwest Report Increasing Numbers — Washington Most Active Area

BULK HANDLING originated in California about ten years ago. The tremendous farms in the Golden State made the practice a logical one for the dairy industry there. Five years later, 1948 to be exact, Bryant and Chapman in Hartford, Connecticut, adapted the method to the smaller farms that prevail throughout most of the nation. About the same time, Edisto Farms in Columbia, South Carolina introduced farm tanks into their operation. Since that time, the method has generated a remarkable interest and has spread to a total of thirty-eight states.

The total number of farm tanks in use on farms in the United States as of August, 1953 is very close to 6,550. The figure was obtained through a State-by-State survey. State departments of agriculture, health departments, university dairy departments, and individual milk plant operators contributed. In some cases, it was possible to get an exact figure. In other cases, particularly those states in which large numbers of tanks are used, an informed approximation was the best that we could get.

The survey covered a period of four months. Some of the figures changed as more tanks were added. Consequently, the total figure for the nation was and is constantly changing. However, it is our considered opinion that the figure of 6,550 farm tanks for August is a sound approximation, accurate within 3 per cent.

Perhaps the most striking fact uncovered by this survey is the remarkable success that the farm tanks have enjoyed in the state of Washington. Although California has the largest number of tanks, an estimated 3,200 with more going in, the method has been used in that state for nearly 10 years. The first tank went into Washington in 1950. A little more than a year ago, there were only about 100 tanks in Washington. Today, there are approximately 1,000 tanks in the state. Sverre Omdahl, Director of the Washington Department of Agriculture, says, "We would not be surprised if there were 2,500 to 3,000 in use by this time next year." Without question, Washington is the most enthusiastic farm tank area in the country.

Leading states in terms of numbers of tanks are California–3,200, Washington–1,000, Wisconsin –450, Pennsylvania–250, Maryland–185, Arizona–180, Oregon–160, New York–160, Virginia–150, Minnesota–125, Massachusetts–75-100. Connecticut has 55 tanks in the state, but is responsible for another 80 tanks in nearby New York that are shipping into the state. A mild surprise was the number of tanks in Arizona and Nevada, numbering 180 and 59 respectively.

Growth of bulk handling has not been as rapid as many early enthusiasts predicted. The growth has been spotty, surging ahead vigorously in some areas, making hardly any impression at all in others. It was, it appears, a period of experimentation. That stage of development is just about over. The first skepticism and the first enthusiasm have both given way to a more sober, a more sound appraisal of the method. The evidence indicates a continued growth, probably more rapid than has been experienced up to now but probably not as rapid as had been expected in the earlier years. It will probably be a much sounder growth and in the long run will be better for the industry than a sudden drastic revolution. Undoubtedly there will be modifications of varying degrees as experience dictates, but the basic principles of rapid cooling, stainless steel surfaces, more efficient handling, and better producer relations appear to give bulk handling the qualities that endure.

TANKS IN THE UNITED STATES

State-by-State Survey Shows California Leading with 3,200 Tanks; Washington Second with 1,000; and Wisconsin Third with 450

STATE	NO. OF TANKS	SPECIFIC REGULATIONS	COMMENTS
ALABAMA	0	None	
ARIZONA	180	None	State Dairy Commissioner estimates 250 tanks by January 1954 and 400 3 years from now.
ARKANSAS	0	None	
CALIFORNIA	3200	Detailed and specific. Among the best.	California, the birthplace of bulk handling, has the largest number of tanks. Due largely to size of farms, but also to progressive nature of industry. Has specific reference to a meter for measuring milk in its regulations. Department of Agriculture anticipates 500 new tanks this year, plus another 500 next. May be more if farmers producing manufacturing milk go in for them.
COLORADO	0	None	Department of Agriculture expects system to start up soon and says it will supervise measuring, sampling on farms and care of samples in transit as well as composites at plant.
CONNECTICUT	55	Detailed regulations	One of the first States to adopt method and promulgate regulations. In addition to 55 tanks in State there are about 80 producers in New York equipped with tanks who are shipping to Connecticut.
DELAWARE	3	Not yet adopted	
FLORIDA	24	No information	On April 1, 1953 Florida had 68 pipe line milkers and 89 tank trucks for hauling milk. Some areas in Florida, particularly in Miami area, have developed bulk handling to a high point. A few large farms own their own tank trucks and use them as holding tanks.
GEORGIA	6	None	
IDAHO	12	USPHS recommendations	No standards and regulations as yet but as process is observed standards will be developed. One dairy using eleven tanks and one tank truck. Other tank is on a large farm that cans off.
ILLINOIS	25-50	No information	Bulk handling still in experimental stage. Considerable interest manifested. Chicago Board of Health, a very important factor in mid-western fluid milk industry, is still studying but has set forth tentative regulations.
INDIANA	14	3A Standards	Eight farms have tanks and tank truck pick-up. Six have tanks but can off the milk. No attempt will be made to write individual State standards. Study projects for information and guidance of health officials are being set up. One bulk tank truck used for storage of milk on farm and transportation to plant.
IOWA	50	No information	Despite the fact that only two dairy companies use all the tanks in Iowa, they have made very effective use of the system. At least one firm expects to get all of its milk this way.

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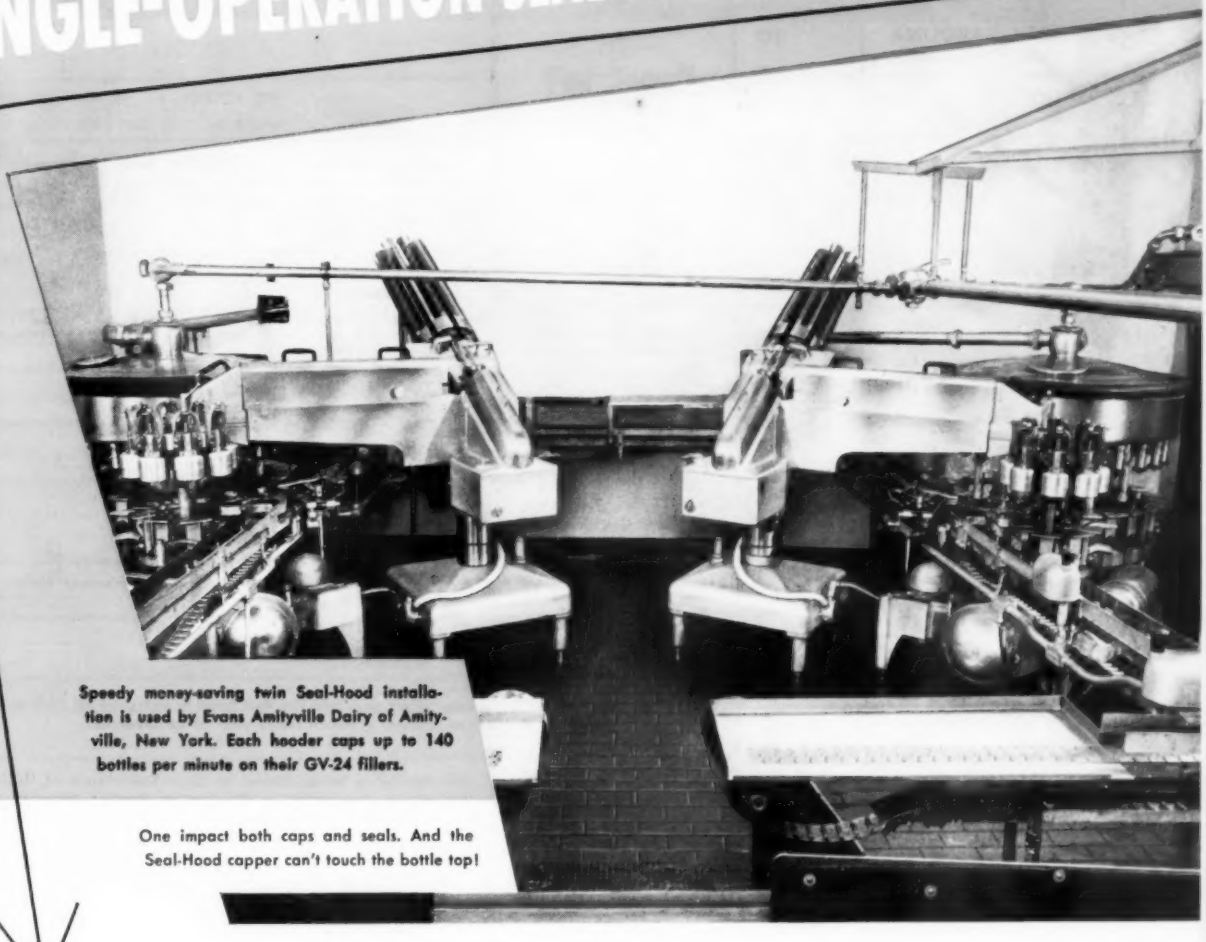
STATE	NO. OF TANKS	SPECIFIC REGULATIONS	COMMENTS
KANSAS	0	None	Little interest shown and informed opinion does not see bulk handling used for some time to come. Necessary regulation will be employed when that time arrives.
KENTUCKY	0	None	When bulk method comes to Kentucky, it will probably be regulated under Section 7 of USPHS Milk Ordinance and Code. Officials are acquainted with and interested in bulk handling.
LOUISIANA	1	None as yet	One tank, installed on a trial basis, is being watched very closely by Department of Health.
MAINE	0	None as yet	Maine situation is likely to change, according to Department of Agriculture officials. Since this information was received, it has been reported that a tank route has been set up in the State.
MARYLAND	185	None	Tanks are calibrated by the Dairy Department at the University of Maryland.
MASSACHUSETTS	75-100	Present milk regulations adequate	Considerable interest in bulk handling apparent. Although no regulations dealing specifically with farm tanks have been promulgated, the State Department of Agriculture has made recommendations concerning size of milk room, washing facilities, and provisions for emergency power.
MICHIGAN	50	No specific regulations	
MINNESOTA	125-150	No specific regulations	Officials feel that tanks and trucks must conform to 3-A Standards. Department of Agriculture is asking Legislature for change in law so that farm pick-up trucker can grade and sample milk at farm after being licensed.
MISSISSIPPI	0	None	If equipment meets the U. S. Public Health requirements for Grade A milk, it would be acceptable for use in Mississippi.
MISSOURI	0	None	Farm tanks have been given some thought in Missouri, but nobody has gone beyond the contemplating stage.
MONTANA	6	None	Interest in farm tanks is increasing in Montana. Milk sanitarians like the method.
NEBRASKA	1	None	
NEVADA	59	Regulations have been revised	Forty-five tanks are cold walled, 14 insulated without the cold wall. Tanks are popular in Nevada, and State health officials predict that there will be a considerably larger number in use within a short time.
NEW HAMPSHIRE	6	Question studied but no new regulations yet.	
NEW JERSEY	55	Regulations drawn up but not adopted	
NEW MEXICO	6	No specific regulations	
NEW YORK	160	State Health Department approval of installation required, except for milk going to New York City. Such milk under control of New York City Board of Health.	Buffalo, Syracuse and Rochester get milk from farm tanks. New York City is trying out method on limited scale. Figure of 160 includes farms shipping to Connecticut but located in New York.

Are operating costs "milking" your profits?

SINGLE-OPERATION SEAL-HOOD SENDS OVERHEAD DOWN!

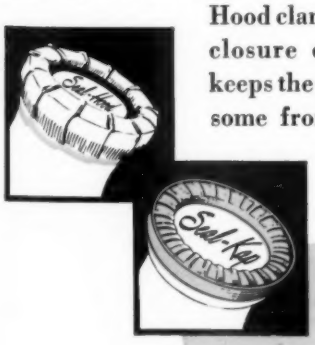


Speedy money-saving twin Seal-Hood installation is used by Evans Amityville Dairy of Amityville, New York. Each hooder caps up to 140 bottles per minute on their GV-24 fillers.

One impact both caps and seals. And the Seal-Hood capper can't touch the bottle top!

Costs are DOWN. No separate hooder is needed with single-operation Seal-Hood. It both caps and seals in one fast operation. Worker output rises . . . time costs fall. Profit-robbing "second-operation" bottle breakage is eliminated.

Protection is SURE. With one quick impact, Seal-Hood clamps a full long-skirted closure over your bottle . . . keeps the milk fresh and wholesome from dairy to doorstep.



And the milk *stays* protected right down to the last drop in the bottle because the closure snaps tightly on and off after being opened.

Efficiency is UP. With our Seal-Hood lease, you get regular maintenance by our expert service mechanics. This assures top-machine performance. Worn or broken parts are quickly replaced. For *all* the details about cash-saving Seal-Hood and Seal-Kap closures, write to us today or ask to have our representative call on you.

AMERICAN SEAL-KAP CORPORATION, 11-05 44th DRIVE, LONG ISLAND CITY 1, N. Y.

Seal-Hoods AND *Seal-Kaps** PROTECT TO THE LAST DROP IN THE BOTTLE

*Trade-mark Reg. U.S. Pat. Off.

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STATE	NO. OF TANKS	SPECIFIC REGULATIONS	COMMENTS
NORTH CAROLINA	10	None	
NORTH DAKOTA	0	None	
OHIO	72	None	Considerable interest in tanks in this State. Department of Agriculture in process of writing regulations at present time. Figure of 72 tanks includes 24 on order at time information was received.
OKLAHOMA	6	No information	
OREGON	160	Detailed specifications on construction, sanitation, calibration, and sampling.	Estimated that there will be 200 tanks in the State by January, 1954.
PENNSYLVANIA	250	None	
RHODE ISLAND	0	Regulations prohibit use of farm tanks.	
SOUTH CAROLINA	41	No information	Figure includes 9 tanks on order for September delivery.
SOUTH DAKOTA	0	None	In the talking stage.
TENNESSEE	12	No information	Late report says that the first route is being set up in Tennessee. About a dozen tanks said to be involved.
TEXAS	18-25	Under study	Bulk method is being studied by State Department of Health through an experiment in the city of Austin. Reported to be 15 or 20 tanks in northern part of the State. Regulations are contingent on Austin experiment.
UTAH	50	No information	Number is expected to increase considerably within the next year or two.
VERMONT	6	Detailed regulations. Permits required of producer and dealer.	First permit issued Nov. 3, 1952. Truck driver is licensed weigher and sampler. Department of Agriculture encourages use of tanks when farm conditions permit.
VIRGINIA	150	Eventually, but not now. Truck drivers licensed as weighers and samplers.	Tanks are concentrated in northern part of State. Milk goes to District of Columbia. Expect number of tanks to increase to 600 over a period of several years. Distributors and processors within the State have not adopted system.
WASHINGTON	1000	Detailed regulations that follow 3-A standards as closely as possible.	Washington is one of the most active areas in the nation on farm tanks. Director of Department of Agriculture says "We would not be surprised if there were 2500 to 3000 tanks in use by this time next year."
WEST VIRGINIA	2	Present regulations apply, although nothing directed specifically at farm tanks.	Nothing in present laws to prohibit use of tanks if properly installed and efficiently operated.
WISCONSIN	450	Detailed minimum recommendations. Permits required of dealers using bulk method.	Wisconsin conditioned somewhat by Chicago Health Department. May be more activity when Department has completed its exploratory work. A later but unofficial estimate places number of Wisconsin tanks at 500.
WYOMING	0	None	Wyoming Department of Agriculture says it does not anticipate any farm tanks in the State for at least five years.

PROVEN PRODUCTION MATES

1. Handles up to 15 quarts per minute (pints and half pints at faster speeds).

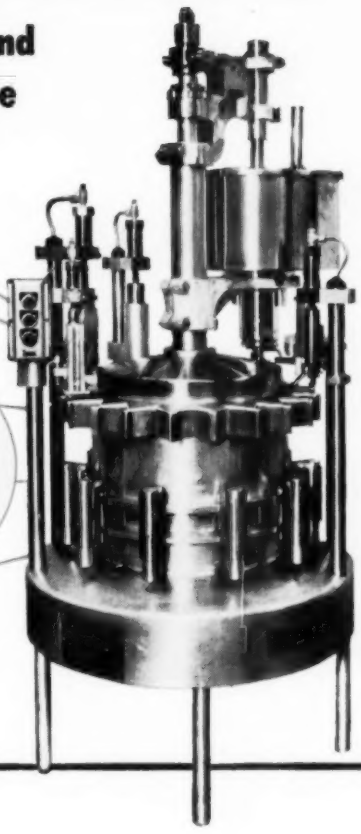
2. Completely automatic (except for loading and unloading).

3. Automatic Detector — minimizes milk waste. If a container fails to be positioned under the filler, if it is improperly positioned or, if a filled container is not removed, no milk is delivered.

4. Size changes in less than 60 seconds.

5. Sold *outright* at a price small and medium size dairies can afford.

For Small and Medium Size Dairies



SOLD EXCLUSIVELY BY SMITH-LEE

CANCO PAPER MILK CONTAINERS

Here is the exclusive Smith-Lee stock design which is extremely popular and sales stimulating for those dairies that desire an economical, distinctive container design. This stock design is sold in combination with Smith-Lee disc inserts for dairy and product identification.

Available in Pints and Half Pints

Backed by a standard production test period of more than nine months in actual dairy operation. The Cox Filler is now operating in fifteen states—write us for location nearest you.

The Cox Filler is the only one in the low-priced field which incorporates every needed safety and sanitary feature found in more costly machines.

All exposed parts are rendered non-corrosive by chromium plating or are made of stainless steel, dairy bronze or special, high-test aluminum alloys.

Optional equipment includes a dating and coding unit that brands the date on the container itself, an automatic Insert Capper that inserts an identification disc in the well of the plug and heavy duty casters.

SMITH-LEE CO., INC.

"SPECIALISTS IN DAIRY PACKAGING"

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MEMBER NATIONAL DAIRY COUNCIL

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ANNOUNCING

The most remarkable natural "orange" ever developed!

New! Sunkist®

Complete sampling and sales promotion program for you

The tested Sunkist sales promotion plan includes: (1) Liberal sampling offer. (Once your customers try this superior orange juice drink, *they're sold.)* (2) Complete advertising aids—bottle collars and hangers, display pieces, letters, direct mail pieces, newspaper ads, radio and TV commercials.

Orange Juice Drink

Made from frozen Orange Juice

Here is a revolutionary new concept in orange juice refreshment, developed exclusively for the dairy industry by Sunkist. It's not an orangeade, not an "orange drink," but is actually a quick-frozen *orange juice* drink, far superior in quality and flavor to anything offered on the market before.

No artificial color! No artificial flavor!

Sunkist Orange Juice Drink has a full-bodied taste derived from natural California orange juice. It is rich in natural juice color, flavor, richness and essential juice characteristics. Each eight ounce serving contains 30 mg. of vitamin C, which is over one third the entire amount normally required daily.

Boost profits! Build route sales!

Sunkist Orange Juice Drink is a distinctive product of highest quality and prestige. It will be reconstituted and bottled for wholesale and home delivery by a select group of quality dairies under license agreement with Sunkist. Packaging can be under the world-famous Sunkist label, backed by millions of dollars of Sunkist advertising, or under the dairy's own label with a Sunkist product endorsement.

This unique quality product will build sales for you, add prestige to your full dairy line, and win new customers for your routemen. Further, it provides a most attractive specialty product profit for your dairy.

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Cost Figures on Bulk Handling

By EMANUEL BAUM and D. E. PAULS

Exclusive feature

How about this bulk method of collecting milk? Does it pay to change from a can system to a bulk system? It is a good question, one that milk handlers in every dairy region in the United States are considering.

As with so many problems, the answer is conditioned by the circumstances peculiar to the individual dairy operation. Some firms should continue to use cans. Some should use a combination can and bulk system. Still others will profit most by switching to a bulk collection system.

Our cost analyses – and of course that's where the answer to making or not making the change lies–here at the State College of Washington indicate some important considerations in favor of the bulk system. We've studied both bulk and can operations in western Washington for our dairymen and milk handlers. The actual figures we got for costs may be somewhat different from those in your particular area, but by substituting your cost figures for ours, you can figure out the general cost relationships between tank and can collection systems under your particular operating conditions. And we believe that these general cost relationships will be similar to those we found in the main dairy areas of Washington.

Farm Storage and Refrigeration Equipment Costs

There's no doubt about the bulk system costing more in initial investment in equipment on the farm. Table 1 gives you the picture for farm tank storage and Table 2 for can storage. In both cases, the more milk a herd produces, the less investment in storage and refrigeration equipment is required per hundredweight of milk produced. This of course favors the larger operations. (If you collect on alternate days, then the farmer will need twice the storage capacity he will need for every day collection.)

Use Farm Storage Equipment Near Capacity

The nearer your producers can come to using their storage and refrigeration equipment to 100 per cent of capacity all the time, the less that equipment will cost per hundredweight of milk produced. Of course, 100 per cent use for all practical purposes is out of the question. Cows don't produce milk to fit a certain equipment capacity. So the equipment has to be large enough to handle whatever a herd may produce, plus a safety margin of about 20 per cent. However, the more a producer's pattern of seasonality of milk production varies, the farther he'll be from using

TABLE 1

Purchase and Installation Costs, Investment per Hundredweight of Capacity, and Daily Fixed Costs of Various Sizes of Farm Storage and Refrigeration Units, Western Washington, 1952*

Capacity of Farm Storage Tank *Gallons*	Total Cost *Dollars*	Cost of Refrigeration Unit *Dollars*	Cost of Storage Tank *Dollars*	Investment Per Cwt. of Capacity *Dollars*	Daily Depreciation, Interest Insurance, & Repair Costs *Cents*
100	1,873	401	1,472	217.79	47.5
150	2,070	433	1,637	160.47	52.4
200	2,190	516	1,674	127.33	56.0
300	2,502	574	1,928	96.98	63.8
400	2,845	638	2,207	82.68	72.5
500	3,112	668	2,444	72.33	79.9
600	3,421	764	2,657	66.28	88.2
700	3,650	809	2,841	60.58	94.0
800	4,288	848	3,440	62.33	109.3
900	4,605	915	3,690	59.54	116.2
1,000	4,853	915	3,938	56.40	124.4
1,500	5,929	1,197	4,732	45.93	149.7
2,000	7,019	1,197	5,822	40.81	181.7

*Costs based on data secured from Interstate Dairy Supplies, Inc., Seattle, Washington; Creamery Package Manufacturing Co., Seattle; Monroe Dairy Machinery Co., Inc., Seattle; Western Dairy Equipment Co., Inc., Portland, Oregon; Rathke & Co., Seattle; Professor W. H. Johnson, State College of Washington, Pullman.

TABLE 2

Purchase and Installation Costs, Investment per Hundredweight of Capacity, and Daily Fixed Costs of Various Sizes of Can Storage Cabinets and Refrigeration Units, Western Washington, 1952*

Capacity of Can Storage Cabinet *Gallons*	Total Cost *Dollars*	Cost of Refrigeration Unit *Dollars*	Cost of Storage Cabinet *Dollars*	Investment Per Cwt. of Capacity *Dollars*	Daily Depreciation, Interest, Insurance and Repair Costs *Cents*
30	418	233	185	161.97	12.0
40	438	244	194	127.33	12.6
60	509	284	225	98.61	14.6
80	595	332	263	86.51	17.1
120	666	371	295	64.54	19.1
160	776	427	349	56.40	22.2
240	886	487	399	42.91	25.4

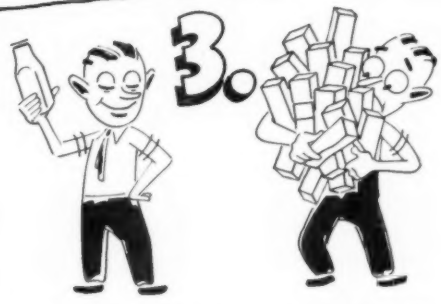
*Costs based on data secured from Creamery Package Manufacturing Co., Seattle Washington; International Harvester Co., Seattle; Standifur Refrigeration Service, Pullman; Monroe Dairy Machinery Co., Inc., Seattle; and Professor W. H. Johnson, State College of Washington, Pullman.

HOW TO SQUEEZE MORE PROFIT

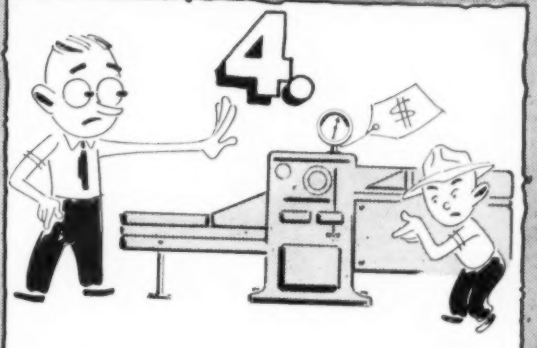
out of every quart of milk you sell

1. Your profit on a quart of milk hinges on the spread between production costs and current selling prices. Clamp down on production costs . . . and you automatically increase your profit per quart.

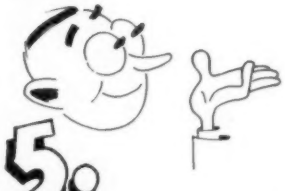
2. To do this, you need an economical dairy container . . . and that's where Glass Milk Bottles come in. Because thrifty Glass Bottles cost less than single-trip containers.



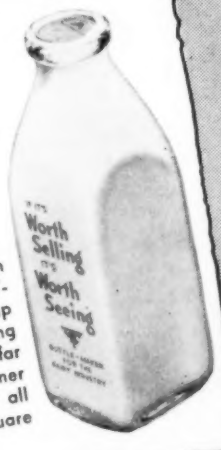
3. Why are Glass Milk Bottles so economical? Simply because they give you so many round trips. With Glass Bottles you get up to 50 trips . . . whereas single-trip containers are used once, then thrown away.



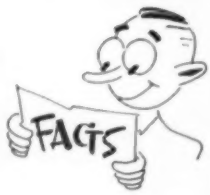
4. And don't forget this fact! Glass Milk Bottles make use of your plant's present production facilities. There's no new equipment to buy or lease.



5. Glass Bottles are better than ever too! Modern Thatcher T-Squares, for example, stand up to the strains of washing, filling and handling . . . give you far more trippage for your container dollar. No wonder 80% of all Thatcher Quarts are T-Square Milk Bottles!



6. Get the facts on T-Square Bottles from your nearby Thatcher representative . . . ask him to stop by your office. Or . . . if you prefer . . . write, wire or phone Thatcher Glass direct.



THATCHER Glass

THATCHER GLASS MANUFACTURING COMPANY, INC., ELMIRA, N.Y.

Factories: Elmira, N.Y., Lawrenceburg, Ind., Streator, Ill.
Representatives in Principal Cities

TABLE 3

Tank Storage and Refrigeration Costs per Hundredweight of Milk for Various Sizes of Units at Different Levels of Capacity Utilization, Western Washington, 1952*

Size of Storage and Refrigeration Unit Gallons	Level of Capacity Utilization (Per Cent) 25 Cents	37.5 Cents	50 Cents	75 Cents	100 Cents
100	44.8	30.1	22.7	15.4	11.6
150	33.1	22.3	16.8	11.4	8.7
200	26.6	18.0	13.6	9.3	7.1
300	20.4	13.8	10.5	7.2	5.6
400	17.5	11.8	9.0	6.2	4.8
500	15.5	10.5	8.0	5.6	4.3
600	14.3	9.7	7.4	5.2	4.0
700	13.1	8.9	6.8	4.8	3.7
800	13.3	9.1	7.0	4.8	3.8
900	12.6	8.6	6.6	4.6	3.6
1,000	12.2	8.3	6.4	4.5	3.5
1,500	9.9	6.8	5.2	3.7	2.9
2,000	9.1	6.2	4.8	3.4	2.7

*Adjusted to alternate day pickup of milk at the farm.

TABLE 4

Can Storage and Refrigeration Costs Per Hundredweight of Milk Various Unit Sizes and Levels of Capacity Utilization Western Washington, 1952

Size of Storage and Refrigeration Unit Gallons	Level of Capacity Utilization (Per Cent) 25 Cents	37.5 Cents	50 Cents	75 Cents	100 Cents
30	21.2	15.5	11.8	8.7	6.6
40	16.7	12.2	9.3	6.9	5.7
60	13.8	10.0	7.7	5.9	4.8
80	11.9	8.6	7.0	5.3	4.5
120	9.4	7.1	5.7	4.4	3.8
160	8.4	6.3	5.2	4.1	3.6
240	6.9	5.3	4.5	3.6	3.2

TABLE 5

Summary of Truck Operating Costs per Route-Mile Western Washington, 1952*

Item of Cost	1,500-Gallon Tank Truck Cents	Per Cent	Can Pickup (Van type) Truck Cents	Per Cent
Fuel and lubricants	5.10	34.16	5.22	37.05
Tires	1.51	10.11	1.49	10.58
Depreciation	2.52	16.88	1.88	13.34
Interest	0.64	4.29	0.41	2.91
Garage and repairs	4.08	27.33	4.29	30.45
Insurance	0.30	2.01	0.25	1.77
Taxes and licenses	0.78	5.22	0.55	3.90
Total	14.93	100.00	14.09	100.00

*On the basis of 23,725 route-miles per year.

TABLE 6

Annual Average Receiving Room Costs per Hundredweight of Milk Can vs. Tank, by Item of Cost, Western Washington, 1952

Item of Cost	Can Operation Cents	Per Cent	Tank Operation Cents	Per Cent
Field expense	1.67	7.23	1.45	16.35
Labor	8.59	37.19	1.33	14.99
Factory expense	3.97	17.19	0.78	8.79
Administrative and clerical	4.64	20.09	4.02	45.32
General overhead	4.23	18.30	1.29	14.55
Total	23.10	100.00	8.87	100.00

his equipment at 100 per cent capacity; and the more his equipment will cost per hundredweight of milk.

For instance, the per hundredweight costs for a 500-gallon tank are 4.3 cents when the tank is used to full capacity, but 5.6 cents when it is used at only 75 per cent of capacity. When you only use half the capacity of such a tank, cost is 8 cents a hundredweight. You can make other such comparisons from Tables 3 and 4 for tank and can operations. The same thing occurs under both systems.

Truck Operating Costs

Costs per route-mile of operating trucks for both systems were similar—14.93 cents for a 1500-gallon tank truck and 14.09 cents for the can pickup truck (Table 5). However, if milk collections are spaced at wider intervals for tank systems, the route is traveled fewer times and per hundredweight collection costs are lower. If milk is collected every other day, the mileage cost on a hundredweight basis will be cut about 40 per cent for a given route.

Receiving Room Operation Costs

Receiving room costs are not eliminated by shifting to the bulk system of procuring milk. However, they are reduced materially. In western Washington, receiving room costs for bulk operations run about 38 per cent of those of a can operation. Can weighing and washing equipment are eliminated under the bulk procurement setup. When this is done, you also cut out the costs which go with those operations—labor, power, cleaning supplies, taxes, etc.

One thing to remember is that much of the remaining cost of receiving milk under a bulk system is transferred to the farm and to the collection route. So you must figure it in there when comparing the two systems. Taking samples, figuring weight of milk from the depth of milk in the farm tank, and washing out the farm tank and the truck tank all require manpower and materials. Any administrative and clerical costs, overhead, and general field expenses, will vary with each handler under either collection system (Table 6).

Loading and Unloading Time Requirements

For the tank system, average fixed time per stop (taking weight of the

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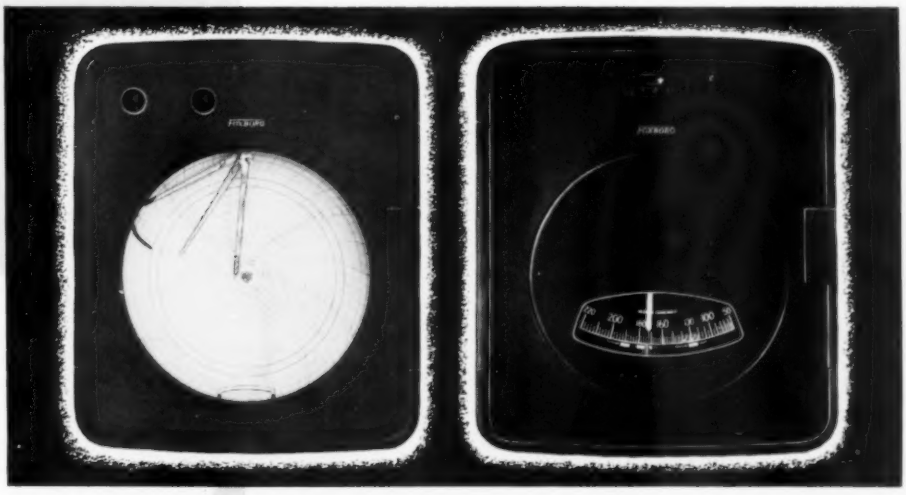
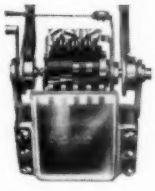
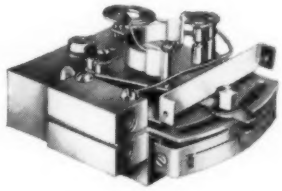
Take the "Acrobatics" out of your HTST pasteurizing





This exclusive Rotax assembly assures positive, unfailing valve operation. Its proven design overcomes disadvantages of ordinary electric controls. Precision setting of diversion point and unfailing operation of diversion valve are certain. Continual adjustment is eliminated.



This advance-design, Foxboro-developed reset unit permits correct adjustment for any process condition. It also permits close setting of top temperature and fast stabilizing of control with minimum of temperature overrun and no cycling. Reset control for HTST pasteurizers was pioneered by Foxboro over 10 years ago. Its advantages are thoroughly proven, widely recognized.

Foxboro Pasteurlog Controller *(left on panel), famous for its exclusive Rotax electrical control system, records milk temperature, operates diversion valve and records valve operation.* **Foxboro Model 40 Indicating Reset Controller** *(right) maintains exact pasteurizing temperature regardless of variations in raw milk temperature and steam pressure. No separate steam pressure control needed.*

Right now is a good time to get rid of this "monkey doodling" . . . just to regulate a pressure valve. With Foxboro Stabilog *Reset* Control there's no pressure valve to operate. This up-to-date control completely eliminates the pressure controller required by old-fashioned proportioning systems!

What's more, Foxboro Stabilog Reset control provides closer control of pasteurizing temperature . . . smoother daily production . . . and it eliminates needless operation of the diversion valve too. For more than 10 years, it has been demonstrating these advantages on many leading dairy HTST pasteurizing installations.

No dairy needs to be behind the times on operating efficiency. Learn what modern HTST pasteurizing control with Foxboro Stabilog Reset is doing for others . . . what it can do for you. Write for details.

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milk, agitating, sample-taking, making and unmaking connections, etc.) was 8.5 minutes. The time it takes the pump to transfer the milk from the farm tank to the truck is in addition to this and varies with the size and make of pump. The pumping rates averaged 488 pounds a minute, with a range from 412 to 555 pounds per minute. Unloading time at the plant averaged 20 minutes in preparation for unloading each load of milk and 90 minutes for washing, sterilizing the tank, and disassembling and assembling the pump for each day's operations. The average rate of flow of milk from the tank truck to the receiving tank was 517 pounds a minute.

Can system loading and unloading times were figured on a per can basis. Average loading time (including incidental operations and unloading empties) average 0.38 minute a can. The fixed time – getting off and on the truck – averaged 0.7 minute for each stop. Unloading at the receiving point indicated an average waiting period of 15 minutes before unloading, and an average of 0.24 minute for each can unloaded and reloaded empty for return to the producer.

Costs Vary with Daily Volume Per Shipper

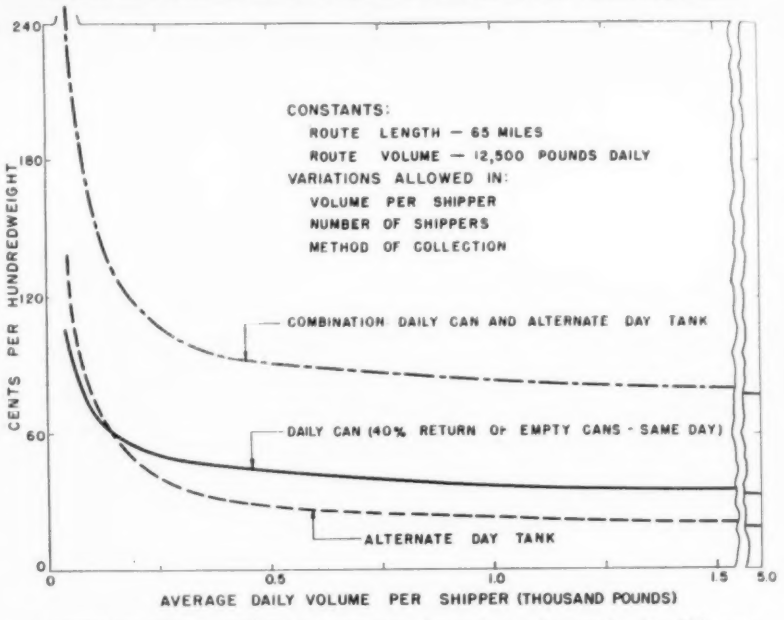
In western Washington, daily can collection costs per hundredweight of milk were lower than alternate day bulk collection costs when the average daily volume per shipper on the route was less than 140 pounds. Beyond that point, tank costs were the lowest. For both systems, these costs decrease as the daily volume per shipper increases and the number of shippers decreases (Fig. 1).

When each shipper had a daily volume of 200 pounds, the costs per hundredweight of milk were 51.5 cents for the daily can system and 46.7 cents for the alternate day tank. At 500 pounds, these costs were 45 and 28.9 cents, respectively.

Where do the savings for the alternate day tank system come? Well, the truck will travel only slightly more than half as far to collect as much milk. Then, receiving room costs are greatly reduced. Route labor costs are lower since driving, loading and unloading time are reduced sufficiently to lower total route time requirements. Although farm storage and refrigeration costs under the tank system are higher, they aren't enough higher to raise total tank system costs above total can system costs.

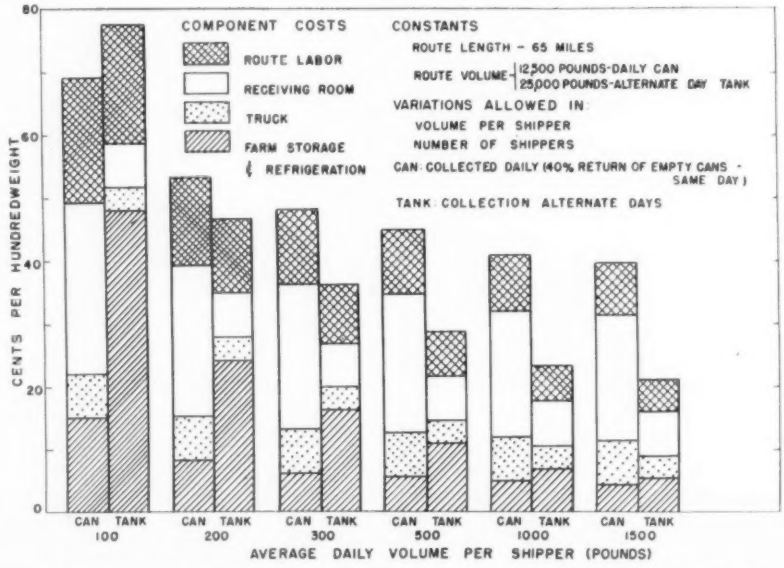
Figure 2 gives you a picture of how these different costs change with volume per shipper. The larger the shipper, the more time saved by fewer stops, and the greater the truck speed between stops. Also, larger farm storage and refrigeration units have lower handling costs.

Fig. 1—Effect of variations in average daily volume per shipper (route length and volume constant) on milk collection and receiving costs.



A comparison of costs involved in a can operation and a tank operation in which route labor, receiving room costs, truck expense, and farm storage and refrigeration are considered, shows the importance of volume per shipper. Note that the can operation is a daily proposition while the tank is figured on an every other day basis.

Fig. 2—Effect of variations in average daily volume per shipper (route length and volume constant) on the component costs of milk collection and receiving.



This chart shows the costs for each of three types of milk handling operation. Note that until the average volume per shipper reaches 140 pounds, the can method is the most economical. Beyond that point, every other day pickup tank truck has the advantage. Picking up every third day is even more economical. Beyond that point, storage costs offset route economies.

KOLD-HOLD truck refrigeration WILL PAY FOR ITSELF!

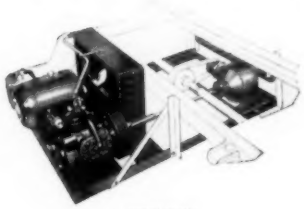
Every day is judgment day in your business. Your customer's judgment determines your success — or failure.

In striving for favorable judgments from your customers, natural color, full weight, garden flavor — these three factors make up the taste test that determine whether your products are preferred. Kold-Hold dependable truck refrigeration keeps you ahead of your competition, in delivering full flavor. Its low cost is customer insurance.

In addition to the advantages in customer satisfaction you also eliminate spoilage losses, enable your trucks to make longer hauls with a full day's load and cut down handling time. With these benefits you can easily see why Kold-Hold truck refrigeration pays for itself.

Petan Dairy Farms, Santa Barbara, California, state that they not only deliver their milk fresh to the customer, cutting down any customer complaints, but any milk that is returned in the truck at the end of the day undelivered still averages between 45° to 48° and creates no problem back at the plant. The undelivered milk is left in the truck (connected to the plant system), and the same milk is then delivered the next morning without unloading and reloading.

KOLD-HOLD *can answer any refrigeration problem!*



KOLD-TRUX

Which do you prefer . . . Mobile or Hold-Over truck refrigeration? Kold-Hold can give you either or a combination of both.

When your weather worries start, pick out the routes with the biggest refrigeration problems and call on Kold-Hold to give you a satisfactory solution. They will give you the right combination for your needs from such highsides as the Kold-Trux Mobile Unit, a mounted compressor, or make-and-break assemblies, coupled to such lowsides as Kold-Hold Hold-Over Plates, Thin Plates, Serpentine Quick-Action Plates, or Blowers.

Why not give us the details of your problems and let our engineers find the most efficient solution for you. Write today for details.

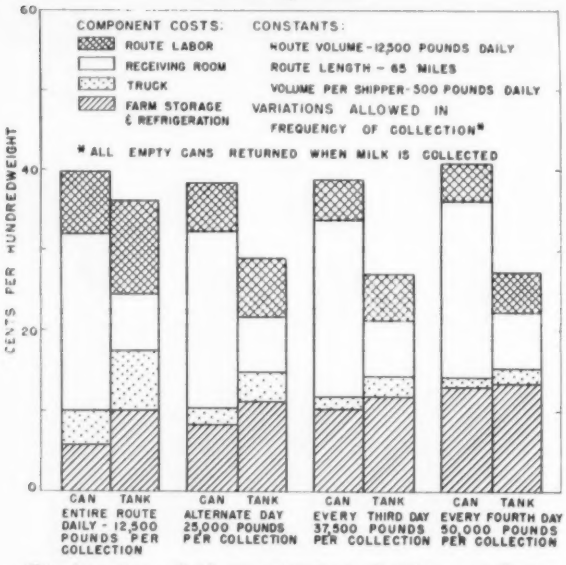
HOLD-OVER PLATES

Tell us your truck refrigeration problems and send now for complete data and literature.

KOLD-HOLD

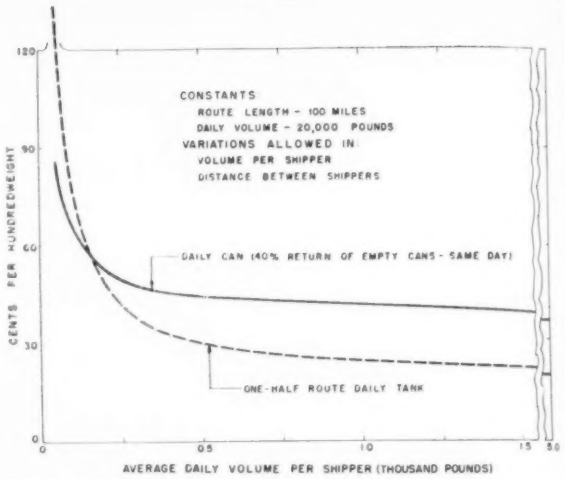
protects every step of the way

Fig. 3—Effect of varying frequency of milk collection (cans vs. tank) by 1day intervals on collection and receiving costs.



This chart shows clearly the advantages of picking up milk on alternate days by tanks. It also demonstrates the point beyond which it is not economical to go. The last comparison, for example, shows what happens when milk is picked up every fourth day. While route labor and receiving room costs are slightly less because of the greater volume, they are more than offset by increased farm and truck costs.

Fig. 4—Effect of variations in average daily volume per shipper on total handling costs per hundredweight of milk.



The size of the truck used on the routes is an important consideration. This chart is based on a 2,500-gallon tanker as opposed to the 1,500-gallon tanker used in previous charts. Again the volume per shipper must exceed 140 pounds before the bulk method becomes economically sound. Note also that the bulk system is alternate day collection.

Frequency of Milk Collection

The costs of collecting milk at various intervals were also investigated. Given the route conditions in Figure 3, for every time period lower costs were found for the tank collection system. Of course, on-the-farm investment in equipment is greater, the greater the time between collections. But receiving room costs should be the same, since the total amount of milk handled each day would not be affected. And truck costs per hundredweight of milk go down with increasing time between collections, since it takes less time to get the same amount of milk. Less collection time and shorter route length to get a certain amount of milk both go to lower route labor costs.

Alternate day pickup gave the lowest cost of any time interval for can collection. For tanks, an every-third-day system seemed the cheapest per hundredweight of milk. Collecting less frequently than these two times increased farm storage and refrigeration costs to the point where they did away with any savings made in other ways.

All our figures so far have been based on a 1,500-gallon tank truck servicing a 65-mile route on alternate days, and a daily can pickup operation servicing the same route. That's because those are most representative of present conditions. But some milk handlers have supplemented their fleet of 1,500-gallon tank trucks with 2,500-gallon tankers.

However, these large tankers aren't expected to be economical on all sorts of routes. Certainly you could expect lower truck operation and route labor costs for routes where there's more milk than a single 1,500-gallon truck can collect. Too, where route distances are long to and from the receiving point, and the route averages daily about 10,500 pounds of milk (21,000 pounds to be collected on alternate days), then the larger tank probably would be most economical.

The cost of operating a 2,500-gallon truck was 19 cents per route mile. As far as time to do the various operations and driving speed was concerned, there seemed to be no appreciable difference between large and small tank trucks. Figure 4 presents a cost comparison between the larger bulk tank truck and a typical can pickup truck on a long route.

So far, comparative costs between the bulk and can collection systems have been presented. But these costs are not the whole picture when it comes to maintaining the present can system or adopting the bulk milk collection. The following considerations ought to be studied carefully by interested handlers.

What's your milk supply situation? Are your shippers close together or far apart? Are they mostly big producers or small producers? Is there a sharp seasonal variation in supply or are your producers' seasonal patterns pretty much leveled out? What are the prospects for both supply and market demand in the long run?

It may be that your producers don't have to depend on you to take their milk. And maybe they may make their own decisions as to whether to use a can or tank system. Under these circumstances, a new handler coming into this area would be in a position to take advantage of whichever system costs the least. Such a favorable position also would hold for the handler whose fixed costs in can receiving equipment have reached, or are approaching, the vanishing point. Even for the handler whose investment in can equipment is heavy, such a situation might make it profitable for him to increase total milk receipts with a tank program without decreasing milk receipts for his present can operation.

ASK HER ABOUT Aluminum!

Ask your wife. Ask your customers. Ask your competitor's customers, too! They'll tell you there is a difference in milk bottle cap preference —and aluminum is infinitely preferred!

Only Basca could dare make this challenge—because the answer's been proved in town after town. They asked housewives in Dayton and the Econ-O-Seal single closure came out the winner by more than 3 to 1. Milk customers in Indianapolis, in Columbus, in Jacksonville, in Nashville and Louisville all preferred Econ-O-Seal.

No complicated surveys. No stuffy statistics involved. Just one simple question was asked: which milk bottle closure do you prefer—and why. Econ-O-Seal won, hands down, because it's all aluminum . . . because it's neater, tighter, safer . . . because it's easy to remove and re-use . . . because there's no paper lining or plug cap.

And every dairy who made the test won another battle over capping costs—less initial cost, less labor, less maintenance, freight and storage expense.

And they picked up new business, too!

Try this test now on your own customers— ask them which milk bottle cap they prefer. Basca will help you. Write for details. Basca Mfg. Co., Division of Huyler's 2222 N. Olney St., Indianapolis 9, Indiana

No dairyman has ever failed to cut costs with ECON-O-SEAL

Such a combination program could decrease his total procurement costs.

An area where there are few milk producers and the total milk supply is small, the situation is different. A handler who has little or no competition may find it costs less to continue can collection for the time being and to wait until his can equipment is depreciated before changing to bulk collection. However, he's open for trouble. If a new handler comes into the picture with a tank system, the older handler may have to meet the competition by an immediate changeover to the same system. That would mean higher costs for a time, because he would still have all his can system equipment investment to write off and part of the extra labor while making such a change.

If you're in an area where dairying is dying out because other types of farming are more attractive, then you'd better keep your investments in new equipment in line with the declining supply to cut costs to the minimum. If the long-run picture is for more production, then it is best to invest with that in mind, even if for a time your costs are relatively higher.

Be sure, too, to take into consideration what type of route you have and what type will have the lower costs in your region. And don't forget the possibility that you may have to pay producers a premium in some way, shape, or form to get them to install tanks.

Getting Producers to Change to Bulk Systems

This latter consideration isn't one to be overlooked. As we've pointed out, there definitely is a difference in costs between the farm storage and refrigeration equipment needed for tank and for can operations. The producer feels that increase in cost immediately. And he's not going to change unless he has some real incentive to do so.

One inducement is an actual higher price of farm tank-stored milk. Or you might offer him a lower hauling charge as a premium. Other inducements may be the belief that a tank unit will lighten the producer's work load, that it fits into his program of herd expansion, and that he must conform when tank collection becomes general and can collection and receiving costs rise. Or there may be any number of other reasons for the producer agreeing to or desiring a change from can to bulk system.

Some handlers install the tank unit on the farm at no cost or risk to the producer.

Whatever inducement is offered, it must be great enough to bring the handler the amount of milk he needs to operate efficiently. That means his inducement will have to be geared to his smallest producers. Larger producers will need less of an incentive, since their unit costs are definitely lower under a bulk system. The premium will have to be somewhere around the difference in cost per hundredweight of milk refrigerated and stored in tanks and similar costs for cans—the latter based on the farm practices of the locality.

It may pay you in the long run to see that your producers get larger tanks than they need right now. That would be if the prospect is for them to increase production in the near future. Not using the larger units to capacity immediately would raise unit costs for awhile, but as production increases these unit costs would decrease. And if a producer starts with a small tank that he can use at a high level of capacity now and then has to tear it out and install larger equipment in a few years, he'll be behind the eight ball costwise. The difference between a 400-gallon tank used at 75 per cent of capacity is only 0.6 per hundredweight more than for a 300-gallon tank used at 100 per cent

If you're going to pay your producers a premium, you've got to make it up in lower operating costs. Remember that maybe you won't be able to lower costs while changing over from one system to the other. But in the long run, it must pay off. These savings come from lower truck operating costs, lower receiving room costs, and lower route labor costs. If you can't make these savings by switching to a bulk system, better not do it.

A few final words of caution in interpreting the data cited above. We made our cost comparisons with definitely defined route conditions, and the assumption that the handler was completely set up in either can or bulk milk collection. You have to compare the two systems this way, or your figures won't give you a true story of what you can expect. For instance, you couldn't compare bulk costs from large producers and can costs from small producers and truthfully say the former were lower than the latter. You won't get the true picture, either, if your can system or routes are so planned as to result in more than a minimum travel for the return of empty cans. And you can't say that a combination can and bulk system would give lower costs if it means you have equipment sitting idle, or have to cross-haul, or have to have more labor.

One of the undisputed virtues of the tank system of handling milk is the high quality of the product that results. This milk room is a good example of the effect that farm tanks have in making producers quality-minded.

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SPECIALIZING IN *Returnable* GLASS CONTAINERS
SINCE 1918

Liberty Glass Company

SAPULPA, OKLAHOMA

On The Legal Side

Recent Court Decisions on Milk

By ALBERT W. GRAY

SALES UNDER AN ILLEGAL CONTRACT

A New Jersey statute required milk dealers to file a bond as security for payment to producers from whom they obtained their supply. A bond was filed by a dealer, and six months later it discontinued purchasing directly from farmers and other producers but instead obtained its supply from a cooperative association with which it made a kick-back or rebate agreement, thus reducing the price below that set by the Milk Control Board.

When later this dealer became unable to meet its payments to the cooperative, that organization filed its claim with the State Secretary of Agriculture, who in turn sued the insurance company on this bond to recover this unpaid amount.

The insurance company contended in its defense that by this rebate agreement between the dealer and the association, the contract was illegal and as a consequence no recovery could be had by the association under its contract.

The Court of Errors in that State, in deciding the appeal of the insurance company from a judgment in favor of the cooperative, said,

"Bearing in mind that the statute was passed for the protection of producers, a strict compliance of the general rule holding all illegal contracts unenforceable would result in this instance in defeating the intent of the statute. To deny a recovery because of the illegal agreement for a rebate or cutback to a producer would be to impose upon the latter a penalty quite out of proportion to the offense. The mere fact that an illegal contract has been entered into will not necessarily defeat an action to recover the value of the goods so furnished."

Allen v. Commercial Casualty Company, 39 Atl. 2d 446, New Jersey.

●

USE TAX SUSTAINED

A dairy in Knox Co., Tenn. brought a lawsuit to recover $557.11 paid to that State as use taxes for the purchase of special filling and sealing machinery.

The machinery was purchased outside the state under an agreement for the payment of $900 upon the signing of the contract and forty-five monthly installments of $200 each.

The statute in that State is, in part, that every person who stores for use or consumption any article of tangible personal property shall be taxed, "At the rate of two per cent of the cost price of each item or article of tangible personal property when the same is not sold but used, consumed or distributed or stored for use or consumption in this state."

In sustaining this tax, the Supreme Court of that State said, "The use tax is a tax on the enjoyment of that which was purchased after a sale has spent its interstate character. It is a compensating tax to place Tennessee manufacturers and merchants on a parity with nonresidents doing business in the State.

"It prevents undue discrimination against local dealers. Its chief function is to prevent the evasion of the Tennessee sales tax by persons purchasing tangible personal property outside of Tennessee for 'storage use or consumption' within the state. It thus prevents unfair competition on the part of out-of-state merchants.

Broadacre Dairies, Inc. v. Evans, 246 S.W. 2d 78, Tennessee.

●

FLAGSTAFF, ARIZONA MILK ORDINANCE VOID

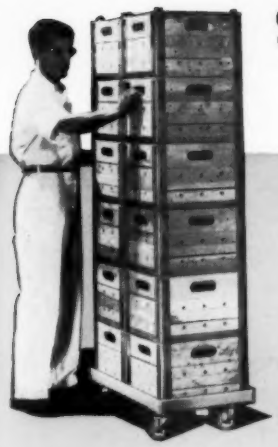
An ordinance adopted by the City of Flagstaff, Arizona, purported to be a "Milk Code," and in addition to provisions for the inspection of milk and milk products, set out regulations for the construction of dairy barns, cow yards, toilets in the barns, water supply, the care of milking utensils, the milking of the cows, the preparation of the cows for milking, the clothing of the milkers, milking stools and other details.

A dairy products corporation of that state applied to the courts for a declaratory judgment determining the validity of this ordinance. After the action had been instituted, the legislature repealed the statute authorizing the enactment by cities of such ordinances.

An earlier decision by the Supreme Court of the State relating to similar milk ordinances said,

"Its application and regulatory effect extends beyond the county boundaries and if permitted to stand would allow the county boards of health in our fourteen counties to set up fourteen principalities with conflicting burdensome and intolerable trade barriers in a field of statewide concern that heretofore had received more than passing consideration as evidenced by the enactment of the state dairy code."

City of Flagstaff v. Associated Dairy Products Co., 255 Pac. 2d 191, Arizona, March 30, 1953.



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CASE DOLLIES
"The Finest"

They pay for themselves—
They cut handling costs—
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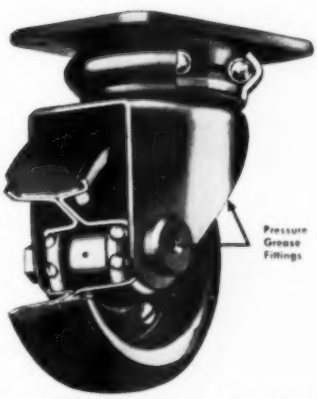
MORE than 20,000 leading dairies have increased handling speed and reduced costs with Haynes Roll-Easy Case Dollies.

Roll-Easy Dollies are sturdily constructed, with heavy all-steel frames mounted on "Roll-Easy" Casters. The entire dolly, including casters, is fully cadmium plated. There is practically no wear-out to a Roll-Easy. Roll-Easy Casters are not just ordinary casters. They are casters that meet the exacting conditions of milk plant service—excess moisture—heat—cold—milk acid—caustics—under varying floor conditions and heavy loads.

5 STOCK SIZES • SPECIAL SIZES TO ORDER

Stocked and sold by all leading dairy supply houses



THE ONLY CASE DOLLIES
with the famous "ROLL-EASY" CASTERS. BALL BEARING WHEEL AND SWIVEL PRESSURE LUBRICATED . . CADMIUM PLATED . . REPLACEABLE RUBBER TIRE

Note: Any minor changes in construction or finish from specifications are temporary and due to inability to secure standard materials.

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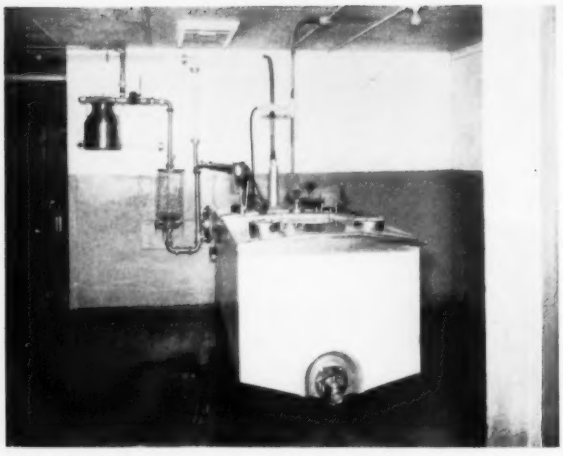
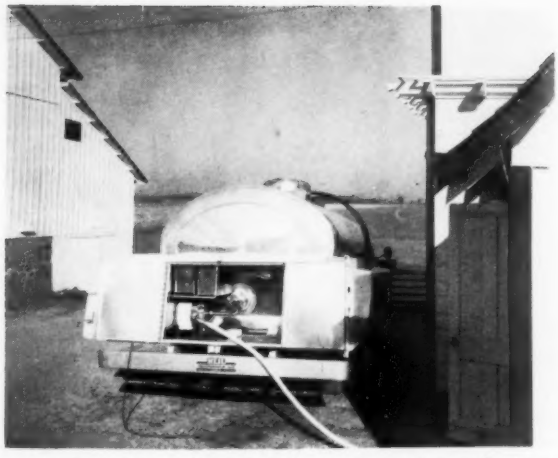


Most regulations on farm tanks have a section on milk houses. Floors, location of tank, washing facilities are usual considerations.



A "tight, insulated cabinet of stainless steel" are the specifications for this important part of the bulk handling operation.

Wisconsin Has an Excellent Set of

Regulations for Bulk Handling

I. Milk house or milk room and associated facilities.

A. A milk house or milk room shall be provided with:

1. Adequate water heating facilities, a double compartment wash sink, and sufficient water pressure to rinse milk residue from utensils and equipment.

2. A bulk cooling tank constructed and located as specified in Section II. All such tanks shall be constructed to meet 3A Standards as approved at the time of installation, or they shall be approved by the department.

3. Self-closing doors with provision for protection against contamination.

4. Sufficient ventilation to assure a rapid change of air.

B. A slab or apron, preferably of concrete construction, of sufficient size and so located as to help protect conducting facilities from filth and soil shall be provided. It shall be adjacent to one outside wall of the milk house or milk room.

C. Milk conducting experiment, as described under Section V, shall pass into the milk house through a port opening which may not exceed 4 inches in diameter and which shall be provided with a self-closing cover. The port shall be of sufficient height above the milk house floor and an outside apron to avoid contamination of the milk conducting facilities. In no case shall this distance be less than 36 inches unless other provisions are made to support conducting facilities and to satisfy other requirements.

D. Where electricity is used as a source of power for pumping milk from the farm bulk tank, an electrical outlet shall be located on the wall of the milk house or milk room near the port opening.

II. Construction of farm bulk tanks, utensils, and related equipment.

A. The milk contact surfaces of all utensils and other equipment used in the handling, storage and measuring of milk shall be of stainless steel or of similar equivalent dairy metal construction.

B. All tanks used in bulk milk operations shall be so constructed that they will drain completely. The tanks shall be located with sufficient clearance to facilitate cleaning on all sides and to permit adequate drainage and ventilation.

C. The bulk milk tank shall be so designed as to cool 50 per cent of the rated capacity of milk in the tank to 50° F. within one hour after completion of the normal milking process, and to at least 40° F. in the second hour after milk flow into the tank has been completed.

D. Each tank shall be equipped with a motor-driven agitator demountable for cleaning and controlled by a manually operated, permanently mounted switch.

E. Each tank shall be equipped with a measuring rod calibrated and identified for use with such tank by the manufacturer, or equipped with some other equally accurate measuring device as noted in Section III, C. Such rod shall be of stainless steel, not less than ¼ inch thick and ¾ inch wide. It shall be suspended in a fixed vertical position in the tank at a place provided therefor and shall be accurate within the following tolerance: ½ gallon up to 400 gallon, plus ¼ gallon for each additional 200 gallons.

III. Measuring, sampling, testing.

A. Quality tests.

1. Examinations by sight and smell shall be made on each producer's milk at time of pick-up by the plant's representative or the transport operator. All abnormal milk shall be rejected.

2. Farm bulk milk supplies shall be representatively sampled in an

New York and Wisconsin are possibly more detailed than other States in their regulations on sampling bulk milk.

The importance of the truck driver is clearly set forth in practically all State regulations. "Key men" say Wisconsin recommendations.

aseptic manner at least twice monthly.

3. Provision shall be made for adequate refrigeration of all samples to preserve them during the period between the time of sampling and of making quality tests.

4. Bacteriological tests shall be made on the samples in accordance with the current edition of Standard Methods for Examination of Dairy Products.

5. Off the bottom type sediment tests or comparable tests shall be made at least twice each month from each farm tank when satisfactory equipment has been devised for making sediment tests. In accordance with Section 5.04 of General Order 124, milk with sediment that is equivalent to an excess of a No. 3 standard shall not be accepted.

B. Butterfat sampling.

1. Sampling to build a composite sample for the making of butterfat tests at the primary plant shall be by the taking of a representative sample of milk after adequate agitation, from each farmer's bulk tank.

1. All samples shall be properly refrigerated during the period of transit from farm to plants.

C. Quantity measurement.

1. The quantity of milk in the farmer's bulk tank shall be determined by the use of the measuring rod specified in Section II, E or by some other equally accurate device approved by the department. When desiring to convert volumetric measurement to weight, the computation, in the absence of specific agreement, shall be made as follows: volume in gallons times 8.60 equals weight in pounds.

IV. Cleaning and sanitizing of farm milk handling equipment.

A. A definite cleaning procedure shall be followed at each farm employing bulk milk handling, and a copy of such procedure shall be conspicuously posted inside the milk house or milk room, preferably on the wall. The general procedure shall be as follows:

1. The farmer's bulk tank shall be thoroughly rinsed with cold or lukewarm water (not hot) as soon as all milk has been drawn.

2. The cleaning operations shall be promptly continued by brush washing all utensil surfaces, with hot dairy detergent water and then rinsing with hot water.

3. Agitator shafts, down-pipes, measuring sticks, and similar equipment shall be protected from contamination by their suspension in farm bulk tanks immediately after cleaning and until they are to be next used.

4. All milk contact surfaces shall be sanitized with a solution of proper concentration just prior to use.

V. Milk transport operators and transport tanks.

A. Tank transport operators and/or associates shall be considered key men in bulk milk handling operations and shall:

1. Be qualified to perform quality sampling, butterfat sampling, and shall be otherwise capable of efficiently carrying out the procedures necessary for the sanitary transfer of milk from the producer's premises to the plant.

2. Maintain clean and tidy personal appearances, wearing only white or light-colored outer garments.

3. Wash hands thoroughly just prior to the handling of milk contact equipment on each farm.

4. Make certain that multi-use equipment, such as butterfat sampling dippers, are washed and sanitized before each use.

5. Complete the respective milk routes as rapidly as possible with no unnecessary delay.

B. Transport tanks and related equipment.

1. All transport tanks used in the transportation of milk from farm to primary plant shall be constructed and maintained in accordance with 3A Standards.

2. Each tank shall be provided with a tight insulated cabinet, the inner surface of which shall be stainless steel. The cabinet shall be of sufficient size and so constructed as to:

a. Provide storage without crowding of fittings, valves, milk pumps, milk conducting equipment, sample bottles, dippers and other equipment used for milk handling purposes.

b. Facilitate ease in cleaning.

c. Provide proper refrigeration of all milk samples by a separate compartment for that purpose.

XUM

Temperature Control

AS TEMPERATURE control assumes a more important place in truck equipment used for the distribution of food products, more truck operators are going to have to learn a little bit about it. While we do not wish to deprecate the ability and skill of the specialists in the field, it really is not so tough to get a reasonable understanding of the problems involved.

As stated in these pages last month, heat flows to cold, so the primary job in temperature control is insulation of the truck body or container. The insulations helps to keep the heat out and thus lightens the load on the equipment and material which is installed to absorb the heat which does get in.

There are two ways to keep bodies cool. One is with mechanical refrigeration, and the other is with dry ice. Both systems have this much in common—they must have circulation of air around the cargo to be effective. Otherwise, it is possible to freeze part of the cargo while an adjacent part spoils for want of refrigeration. The platform upon which the cargo rests must be slatted so air can pass under it.

The cargo must be loaded so that there is room for air passage above it and on both sides of it. The slats must be in the proper direction so as not to obstruct the flow of air.

Pressure and Heat

Mechanical refrigeration is a simple apparatus to promote and adapt a natural phenomenon to a useful purpose. Gas or liquid when put under pressure gives off heat. When the pressure is released, it absorbs heat. Thus mechanical refrigeration compresses liquid or gas outside the cargo compartment and releases the pressure inside the cargo space. In the process, heat is absorbed inside the cargo space and exhausted outside into the atmosphere.

The mechanical system begins with a storage tank where refrigerant is kept under pressure. Pressure is supplied by a mechanically driven compressor. Usually the power plant is a small gasoline-driven engine.

Refrigerants are highly developed and are carefully adapted for use with specific apparatus. The refrigerant should be a dense gas when in the gaseous state to reduce compressor capacity requirements, and it should have a low boiling point. The lower the boiling point, the lower the temperature at which it can absorb heat. In addition, it must be non-explosive, and it must be non-toxic in case of leaks. Freon 12 is about as popular a refrigerant as there is these days. It has a boiling point of 21° F. at atmospheric pressure.

The refrigerant is forced through a throttle valve or float valve into the evaporator where it encounters only atmospheric pressure. The compressor is used to create a slight vacuum in the evaporator, and the liquid refrigerant becomes a gas.

Under these conditions, heat absorption takes place. The evaporator is sometimes finned to provide as much cooling area as possible. From here, the gas is inducted back to the induction side of the compressor, and then driven into an evaporator by the compression side of the compressor, and then back to the receiving tank.

Weight and Cost

A mechanical system will weigh between 1,300 and 1,800 lbs. for sufficient equipment to bring a 32′ body down to −10° F. It will cost between $2 and $2.50 per day to operate if the maintenance is good.

Dry ice equipment is not as heavy. For the same size body, probably 600 lbs. of dry ice and 300 lbs. of equipment will maintain 0° F. It is not as expensive to buy but will cost more to operate, including the replenishment of dry ice.

The only moving parts in dry ice equipment is the fan and drive motor. Power is usually supplied by a battery. Bunkers which are usually loaded from the outside are arranged so that a large surface is maintained while the dry ice supply is diminishing.

Usually air is directed through a cooling duct towards the bottom of the dry ice bunker and exhausted through the top. Thus only the height of the cake of dry ice is affected while the total area remains about the same.

Some systems use radiation plates, which prevents the air from coming into direct contact with the dry ice and thus prevents the air given off from containing carbon dioxide unless it is desired, as it is in some cases. It is possible to vent the gas into the outside air.

Dry ice has been more popular as a means of cooling small trucks than other means. This despite the fact that in the early days of its use it was handled in haphazard fashion with poor results. More recently with improved handling and equipment, it has been giving satisfactory results in trucks of all sizes.

Maintenance and mechanical failures are nil with dry ice. There is only a fan or two which can cause trouble, and these of course are pretty reliable.

Your choice of time-saving, low-cost power—the famous 106-h.p. Truck V-8 or LOW-FRICTION 101-h.p. *Cost Clipper* Six with overhead valves. *Deluxe (illustrated) at extra cost.*

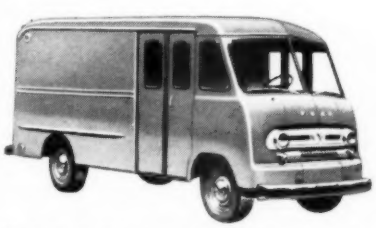
America's smartest half-ton panel is your smartest buy!

Inside and out, this all-new Ford F-100 Panel is designed to help you deliver more merchandise, at less cost, with greater ease and safety. And its handsome looks are bound to build prestige for any business.

Long, high and wide, the F-100 Panel gives you up to 155.8 cu. ft. of load space for easy handling of bulky items. Floor is solid plywood, impregnated for longer life and protected by steel skid strips. Body is sealed tight at joints of wheelhouse strips and side panels against dust, fumes and moisture . . . for the utmost in load protection. Stronger rear doors of heavy-gage steel construction open fully or hold firmly at 90° open for easier loading.

You get a choice of two beautiful body types—the F-100 Panel or the F-100 Panel Deluxe (shown) with 17 "customized" extras. Your choice, too, of V-8 or Six and *five* transmissions—including Overdrive and Fordomatic . . . the widest choice in the field.

For downright utility, sleek looks and the savings that come from rock-bottom running costs, you can't beat the all-new Ford F-100 Panel!



NEW FORD P-350 Parcel Delivery Chassis gives you more than double the load space of conventional light duty panels. Takes 7- to 11½-ft. bodies with up to 400 cu. ft. capacity. Comes with complete front end or as stripped chassis.

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T-33 Check here if student ☐

Here's How a Large Western Dairy Organization Handles the Problem of

FINANCING FARM TANKS

Partial List of Requirements and Financing Plans for Farm Tanks, as of 1-30-53. (Subject to Revision as Required)

Financing Plan

1. Down payment whenever possible if producer is willing to make one.
2. Terms—uniform monthly payment up to 36 months.
3. Interest—4% simple.
4. Security—note and mortgage on tank.
5. Credit rating—all transactions are subject to prior approval of dairyman's credit by bank.

Premium Payment by Dairy

10c per cwt.

Handling Rates

All areas will have a reduction in handling rate of 15% or more.

Pickup

Tank capacity must be such that milk can be picked up on every other day basis.

Tank Sales

1. Salesman from dairy tank supply company solicits producer and takes signed order from producer.
2. Information desired on the order is as follows:
   a. Full name of producer (middle initial);
   b. Wife's given name and middle initial;
   c. Down payment, if any, and tentative payment schedule.
3. A scale drawing must be submitted to the area milk inspector and must be approved for each installation. The completed installation must be satisfactory to the milk inspector.

Billing

Invoices must show serial number of tanks and make, model, and serial number of compressor as installed.

Tank Installations

1. All sales must be on the basis of "installation complete."
2. All extras should be included in the original order as it is taken from the producer.
3. "Installation" includes necessary wiring inside milk house to operate refrigerated tank satisfactorily.
4. Satisfactory calibration of tank.
5. An approved and properly located wall fitting for tank hose.
6. For tanker pump. One weatherproof outside Crouse-Hinds conduit with Hubba-lock H. 23,000, 3-wire locking receptacle wired to a conveniently located inside switch. 110 volt current required.
7. Satisfactory operation of the completed installation.
8. Thermometers are desirable but not required. (No floating glass thermometers allowed.)

Insurance

All tanks are insured for protection of the producer and mortgage holder for the duration of the loan. This is full coverage insurance and covers fire, theft, collision, etc. The rate is 5c per $100.00.

Calculation: 5c × number of months of loan × primary amount of loan (installed price plus tax) equals total amount of insurance.

Approximate calculations of amount of installment at 4% simple.

Multiply price of tank complete by 2.2% and then by 3 years (36 months) to get approximate amount of interest due.

Calculating total cost of tank to producer (example of 300 gal. tank—36 months to pay.)

Cost of tank installed	$2,200.00
Sales tax 3%	66.00
Filing fees	4.25
Insurance	40.75
Interest (4% simple)	152.53
Total amount of loan	$2,463.53
Monthly payment	$68.43

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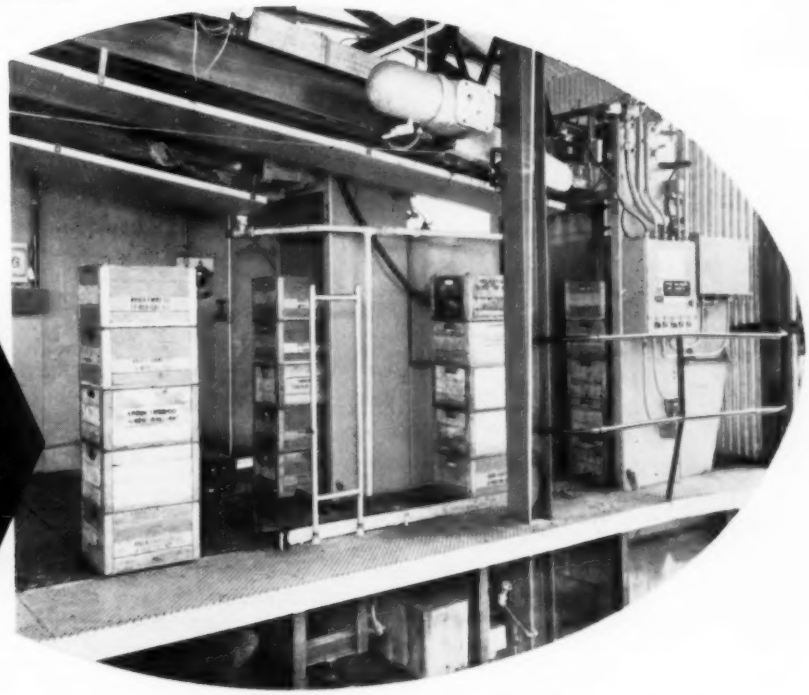
over $40,000 a year in labor alone!

Two FMC Series 389.000 Automatic Case Stackers are on continuous duty at Arden's great Slauson Avenue Plant in Los Angeles, California, doing the "back-breaking man-saving" job of eight men.

fmc AUTOMATIC CASE STACKERS



Arden's two FMC Automatic Case Stackers in action. Note they are fully automatic. They can handle up to 23 cases per minute. Any square or rectangular case, capable of stacking, can be stacked to any practicable height. Stackers reduce industrial injury hazard as well as damage to case contents. They receive, build and eject stacks without the aid of an attendant.

In Arden's plant a down-stacking operation is used because of the overhead conveyor system. However, top or bottom automatic stackers with entry from left side, right side, or back with front discharge are available for any flow plan. The gentle handling of filled cases by FMC Automatic Stackers practically eliminates the problem of leaking milk cartons—"leakers" caused by rough handling when stacking is done by hand labor.

Arden's Automatic Conveyor System and FMC Stackers have greatly increased the plant's efficiency and smoothed production line flow. For example, the bottling operation of the plant now works continuously since interruptions previously encountered in the loading operation have been eliminated.

For detailed information and literature write

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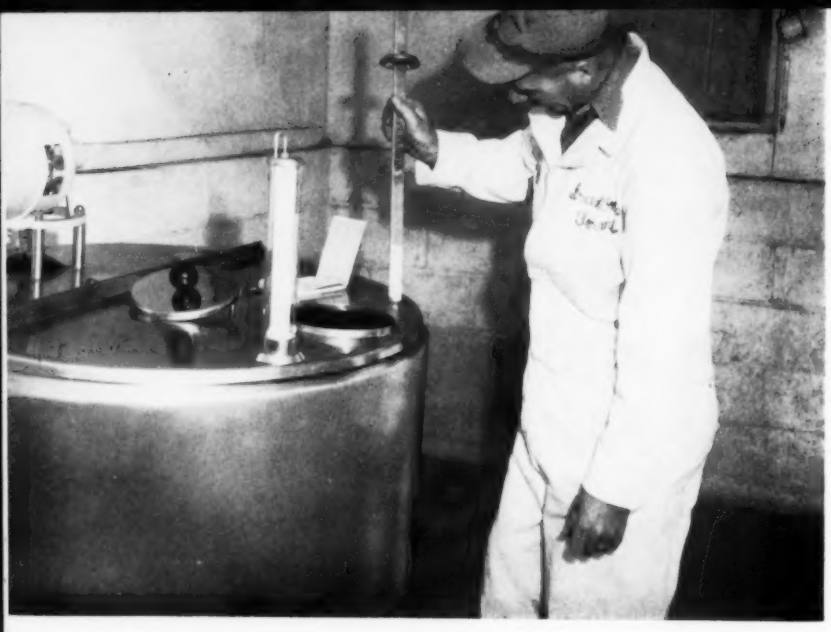

A crucial step in the bulk handling operation is determining the amount of milk in the farm tank. The metal measuring gauge is the device most widely used for this purpose. Weights and measures people, however, do not like the practice of converting the volume of milk thus determined into pounds. They recommend buying on a volumetric basis.

Here is the new

Code for Measuring Milk in Farm Tanks

Adopted by the National Conference on Weights and Measures. This Code Becomes Part of National Bureau of Standards Handbook 44

THE PROBLEM of determining the amount of milk that a farmer sells to a dealer has always been a difficult one. The problem has not been so much one of accurate measure as it has been a problem in human relations and handling. Milk weighed at the plant by means of modern weighing devices gives an accurate result for the amount of milk in the pan. That amount, however, is often at variance with the farmer's estimate of what left his milk house. One of the big virtues of the farm tank, therefore, is the fact that the farmer is paid for the milk that is in his tank on his farm. The amount of milk is determined on the premises and while the farmer is present if he wishes.

The question of determining the amount of milk in the tank has been met by means of a calibrated measuring rod which shows the volume of milk. This volume is then converted into pounds. Another method is to use a tube gauge. Both of these methods, it must be emphasized, measure volume.

Weights and measures people have been interested in this matter of measuring milk in farm tanks. Indeed there was some skepticism at first concerning the reliability of the method. In May of this year, the National Conference on Weights and Measures, meeting in Washington, D. C., heard a report from a Conference committee that had been appointed to study this question. The report set forth a tentative code which included detailed specifications for the gauge rod or gauge tube, whichever happened to be used. That report is printed below along with some very pertinent observations by the committee.

The tentative report was adopted by the Conference. The code has been published and distributed as the 1953 Correction Sheets to National Bureau of Standards Handbook 44, entitled Specifications, Tolerances and Regulations for Commercial Regulations and Measuring Devices.

The codes adopted by the National Conference on Weights and Measures are recommendations only and have no legal status in any State until such codes are officially adopted by the State. Also, since this special code becomes a part of National Handbook 44, the general code appearing in front of the handbook is also applicable to farm milk tanks, and actually becomes a part of the code for these devices. In construing the tentative code for milk tanks, one should take into consideration the provisions of the general code in Handbook 44.

Tentative Code for Farm Milk Tanks

A. APPLICATION

A-1—This code applies to farm milk tanks, as defined, only when these are used, or are to be used, under an express contract between the producer and the purchaser and on the premises of the producer, for the commercial measurement of milk or other fluid dairy product. If such measurement is accomplished by means of a

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fluid meter, this code does not apply; in such case the meter shall be subject to the applicable provisions of the code for liquid-measuring devices.

D. DEFINITIONS

D-1—*Farm Milk Tank*—A unit for measuring milk or other fluid dairy product, comprising a combination of (1) a stationary tank, whether or not equipped with means for cooling its contents, (2) means for reading the level of liquid in the tank, such as a removable gauge rod or a gauge tube, and (3) a chart for converting level-of-liquid readings to gallons, or such a unit in which readings are made on gauge rod or gauge tube directly in terms of gallons. Each compartment of a subdivided tank shall, for purposes of this code, be construed to be a "farm milk tank." (These units are variously known commercially as "farm bulk milk tanks," "farm cooling tanks," and "producers tanks.")

S. SPECIFICATIONS

S-1.—*Design*—(See also S-2.4).

S-1.1—*Level*—A farm milk tank shall be in normal operating position when it is in level. The tank shall be equipped with suitable special means by which this level can be determined and established, such as a permanently attached two-way or circular level, a plumb bob, leveling lugs, or the like; or the top edge or edges of the tank shall be so constructed throughout as to provide an accurate reference for level determinations.

S-1.2—*Discharge Valve*—A farm milk tank shall be equipped with a discharge valve through which the tank may be completely emptied when the tank is in level.

S-1.3—*Gauge-Rod Bracket*—If a farm milk tank is designed for use with a gauge rod, a substantial metal gauge-rod bracket shall be rigidly and permanently attached to the tank. The bracket and rod shall be so designed that, whenever the rod is placed in engagement with the bracket and released, the rod will automatically seat itself at a fixed height and will hang in a vertical position with a clearance of not less than 3 inches between the graduated side of the rod and the tank wall which it faces.

S-2—*Indicating Means*

S-2.1—*Gauge Rod*—A gauge rod shall be of metal and shall be of suitable and rigid design. When seated on its bracket, the rod shall not touch the bottom of the milk tank. The rod shall be graduated throughout an interval corresponding to at least the upper one-half of the tank capacity.

S-2.2—*Gauge Tube*—If a farm milk tank is designed for use with a transparent gauge tube, such tube shall have an inside diameter of not less than ¼ inch, and shall be open at its top end. At the inlet end of the tube, there shall be a shut-off valve. Immediately adjacent to the tube, there shall be permanently mounted a graduated metal scale extending throughout an interval corresponding to at least the upper one-half of the tank capacity. The graduated scale shall be so designed and mounted as to reduce parallax to a minimum.

S-2.3—*Spacing and Width of Graduations*—On a gauge rod or gauge-tube scale, the spacing of the graduations, center to center, shall not be more than 0.0625 (1/16) inch and not less than 0.03125 (1/32) inch, and the graduations shall be not less than 0.005 inch in width. (See also G-S 4.2.3 and G-S 4.3.)

S-2.4—*Values of Graduations*—On a gauge rod or gauge tube scale, the graduations may be designated in inches and fractions thereof. In this case, there shall be provided for each such rod or scale and each of the farm milk tanks with which it is associated, a gallonage chart showing values in terms of gallons corresponding to each graduation on the rod or scale. If a rod or scale is associated with but one farm milk tank, in lieu of linear graduations, values in terms of gallons may be shown directly on rod or scale. Graduation designations shall increase from the bottom upward. The value of a graduated interval (exclusive of the interval from the bottom of the tank to the lowest graduation) shall not exceed 1 gallon for a tank of a capacity of 500 gallons or less, and shall not exceed 2 gallons for a tank of a capacity of more than 500 gallons.

S-3—*Gallonage Chart*—A gallonage chart shall show values at least to the nearest ½ gallon for a farm milk tank of a capacity of 500 gallons or less, and at least to the nearest gallon for a tank of a capacity of more than 500 gallons. All letters and figures on a chart shall be distinct and easily readable, the chart shall be substantially constructed, and the face of the chart shall be so protected that its lettering

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and figures will not tend easily to become obliterated or illegible.

S-4–*Installation*–A farm milk tank shall be rigidly installed in level without the use of removable blocks or shims under the legs. If the tank is not mounted permanently in position, the correct position on the floor for each leg shall be clearly and permanently defined.

S-5–*Identification*–A farm milk tank and any gauge rod and gallonage chart associated therewith shall be mutually identified, as by a common serial number, in a prominent and permanent manner.

N. NOTES

N-1–*Calibration*–Farm milk tanks shall be originally gauged and officially tested to "deliver."

N-2–*Testing Medium*–Water shall be used as the testing medium in gauging and testing farm milk tanks.

N-3–*Gauge-Tube Readings*–All gauge-tube readings on a farm milk tank, whether during gauging, testing, or commercial use, shall be made to the top of the meniscus of the liquid in the tube.

N-4–*Approval Seals*–When a farm milk tank installation is officially tested and approved, the gauge rod and the gallonage chart, if these elements are utilized, as well as the tank itself, shall be suitably marked to indicate such approval.

T. TOLERANCES

T-1–*Minimum Tolerance Values*–On a particular farm milk tank, the maintenance and acceptance tolerances applied shall not be smaller than one-half the value of the minimum graduated interval on the gauge rod or gauge-tube scale.

T-2–*Basic Tolerance Values*–Basic maintenance and acceptance tolerances on under-registration and on over-registration shall be as shown in Table 1.

Table 1

MAINTENANCE AND ACCEPTANCE TOLERANCES FOR FARM MILK TANKS

Indicated Gallonage	Tolerance Gallons
500 or less	½
501 to 1000, incl.	1
1001 to 1500, incl.	1½
1501 to 2000, incl.	2
Over 2000	2½

R. REGULATIONS

R-1–*Level Condition*–A farm milk tank shall be maintained in level.

In the drafting of this code, your Committee has kept in mind several basic principles. First, this is a weights and measures code, not a sanitary code. Those agencies and persons who are interested in the sanitary phase of this equipment have been consulted, and the effort has been made to avoid anything which would conflict with current or contemplated sanitary requirements. It is the belief of your Committee that no such conflicts are incorporated in this code.

Second, the Committee has endeavored to follow the basic principle of preparing a code which is as brief and as simple as is practicable; yet there has been no sacrifice of adequacy for the sake of brevity and simplicity. It must be understood that this code will become a part of National Bureau of Standards Handbook 44. The provisions in the general code in that Handbook are applicable to farm milk tanks, the same as they are to other specific codes in the Handbook. Your Committee feels that, when the broad terms of the general code are construed collectively with the provisions of this specific code, it will be found that these devices are being covered adequately.

Third, the Committee on Specifications and Tolerances always has considered that the H44 codes primarily are performance requirements; they are not proposed as design, engineering, or purchase specifications. In the preparation of the farm milk tank code, this principle has been adhered to.

Fourth, the H44 codes do not purport to include detailed test procedures. Test procedures are covered in NBS Handbooks 37 and 45. When Handbook 45 was written, there was no code on farm milk tanks; therefore, no chapter was included in the Handbook to cover test procedures for these devices. It is anticipated that supplemental material to Handbook 45 will be published in the future. At that time, data on testing farm milk tanks will be included.

Meaning of "In Level"

A few questions relative to the proposed code for farm milk tanks have been asked by several persons. Paragraph S-1.1–*Level*, seems to have troubled some individuals. It reads in part as follows:

> A farm milk tank shall be in normal operating position when it is in level.

It was not understood exactly what was meant by the term "in level." This provision, together with the provision that the device be equipped with suitable special means by which this "level" can be determined, conforms with the language which has been used for many years in other codes. It means that position which is established through the special means provided by the manufacturer for determining the level of the device. If a tank is equipped with a two-way level permanently attached to the device, then, when the unit is so installed that the two-way level shows that the instrument is level in both directions, the device is construed to be "in level." If the manufacturer specifies that the top edge or edges of the tank shall be the means by which the level shall be determined, then, when an accurate and sensitive level is placed at at least two points at 90-degree angles to each other and both points show it to be level, the tank is "in level." The manufacturer determines the proper operating position of the tank and provides his leveling means accordingly. Thereafter, the weights and measures official or the operator of the unit will check, through the means provided by the manufacturer, to determine whether or not the unit is in proper level or operating position.

Several persons, including a few weights and measures officials, have expressed themselves to the Commit-

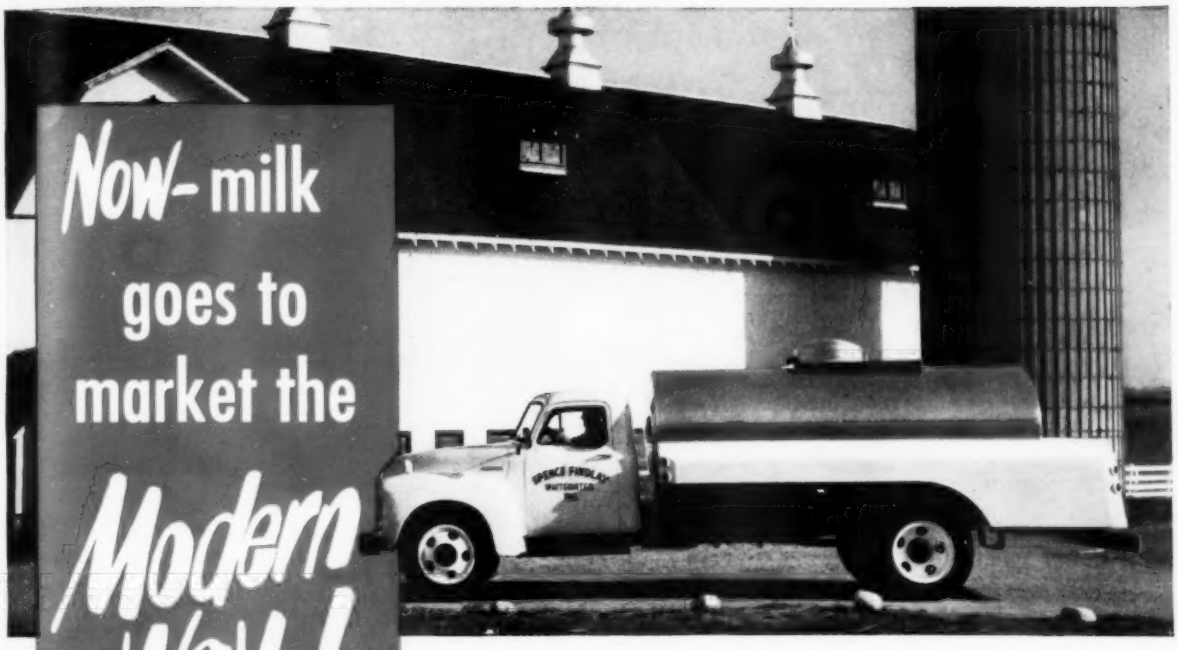
(Please Turn to Page 72)

WHO DO YOU PICK TO WIN?

For the last two years, we have stuck our necks out and predicted the winners in the college judging contests at the dairy conventions. We'll do it again this year, but we'd like some company. Try picking the top three teams in All Products. Send us your choice, and we'll publish it along with our own. Some fun.

This year's contest will be held in Boston on October 26. There will be approximately 25 teams entered.

Ohio won last year, Mississippi the year before. We picked the three top teams in '51, got 4 out of 5 in '52. Send your choices to Norman Myrick, *American Milk Review*, 92 Warren St., New York, N. Y.



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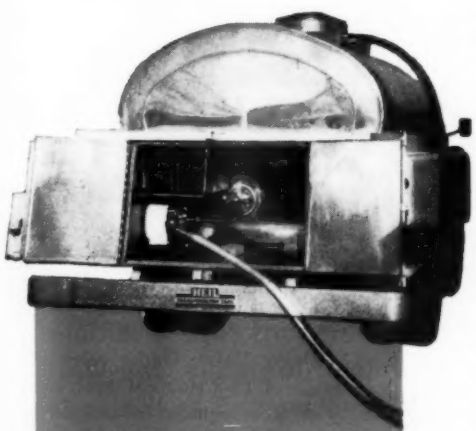
IN HEIL FARM PICK-UP TANKS



A Heil Farm Pick-Up Tank provides the most efficiently designed compartment area ever offered. Doors have full-length, continuous stainless steel side hinges and lock securely with a refrigerator-type door latch to make the cabinet air-tight. Fully insulated and completely lined with stainless steel, the cabinet houses inlet-outlet valve, reversible positive displacement or centrifugal pump, sample trays, ice chest, sanitary hose, and couplings. Electric motor, V-belt drive, and extension cable are housed in a separate cabinet to the left of the service cabinet.

FROM cow to quick cooling tank . . . then direct to the dairy in a Heil Farm Pick-Up Tank! That's the *modern way* "milk goes to market". It's quick and easy . . . it's the sanitary, economical way to transport milk and eliminates the back-breaking labor of the old 10-gallon can operation.

Virtually a "receiving station on wheels", the Heil Farm Pick-Up Tank eliminates the necessity for the dairy to maintain country and city milk plant receiving rooms. Hauling costs are reduced—one pick-up tank can serve several routes. A self-contained unit, it is fully equipped to pick up and deliver milk under the most sanitary conditions.

Heil Farm Pick-Up Tanks are designed and built with the same skill and know-how that have established the longest and most successful experience record in the industry. They are feature-packed units with smartly smooth outer jackets in your choice of aluminum, steel, or stainless steel. Side ladder and stainless steel deck plate provide safe, easy access to the famous Heil manhole cover. Traditional Heil quality in every construction detail clearly tells why more milk goes to market in Heil tanks than in all other makes combined.

Heil truck-mounted Farm Pick-Up Tanks are built in capacities from 1000 to 2500 gallons. Heil Trailerized Farm Pick-Up Transports are available in capacities from 2500 to 4500 gallons. Write today for the complete story and specifications.

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In June, The 3-A Sanitary Standards Committees Codified The Experience With Bulk Handling Equipment Into

3-A Sanitary Standards For Farm Holding Tanks

THESE STANDARDS SPECIFY—

- **The Definition of Farm Tanks**
- **Materials Used in Construction**
- **Details of Fabrication Including Thermometers, Valves, Agitators, and Refrigeration**
- **Requirements for Measuring Devices***

It is the purpose of the International Association of Milk and Food Sanitarians, Inc., United States Public Health Service, and The Dairy Industry Committee, in connection with the development of 3-A Sanitary Standards, to allow and encourage full freedom for inventive genius of new developments. Farm Holding and/or Cooling Tanks which are developed which so differ in technique, design, material and construction or otherwise, so as not to conform to the following standards but which are, in the opinion of the manufacturer or fabricator, equivalent or better, may be submitted at any time for consideration by IAMFS, USPHS and DIC.

DEFINITION of Farm Holding and/or Cooling Tank for Bulk Milk: Tank used for the purpose of storing and/or cooling of milk or milk products on the farm.

Tanks, as defined above, shall be considered meeting the 3-A Sanitary Standards when they comply with the following requirements in (A) Materials and (B) Fabrication.

A. MATERIAL:

1. The inside lining, covers, bridges, doors, underside of insulated covers or bridges, agitators, tubing for compressed air agitation, inlet and outlet connections, measuring device, distributors, and any other parts coming into contact with milk or milk products shall be of 18-8 stainless steel with a carbon content of not more than 0.12 per cent. The surfaces of all such parts shall be at least as smooth as No. 4 mill finish or 120 grit finish properly applied.

2. *Inside Lining:* The inside lining is defined as all surfaces which contain the milk, or which extend above the breast as a cooling surface, and/or is used to enclose the ends, sides, and top, in lieu of bridges or fixed covers. The inside lining shall be made of 18 U. S. ga. minimum thickness. The weld area and the deposited weld metal shall be substantially as corrosion-resistant as the parent metal. The breast, or that portion of the metal used to join the inside lining proper to the outer vertical wall, shall be considered as coming into contact with the product and shall be of 18-8 stainless steel.

3. *Insulation:* (a) Tanks not provided with integral cooling surface shall be so insulated as to prevent in 18 hours, a temperature rise greater than 3° F. in a tank full of water when the differential between the water and that of the atmosphere is 50° F. (b) Tanks provided with integral cooling surface for direct expansion or refrigerated water shall be provided with outer shell and automatic temperature control system which will prevent a rise of more than 5° F. of the cooled milk, except when additional milk is added.

(It is recommended that all tanks be provided with insulation.)

4. *Outer Shell:* The outer shell, or that portion of the material covering the exterior of the insulation or heat exchange jacket, shall be of a continuous metal covering which is smooth, sanitary and effectively sealed.

5. *Outlet Valve:* Outlet valve shall be made of 18-8 stainless steel, nickel alloy or other equally corrosion-resistant material. "O" rings, when employed, shall be made of a resilient rubber-like material that is nontoxic, relatively stable, relatively nonabsorbent and has a smooth surface.

B. FABRICATION:

1. All milk or milk product surfaces, covers, doors, fittings and accessories, shall be visible to sight, easily accessible and readily cleanable when in operating position or when removed.

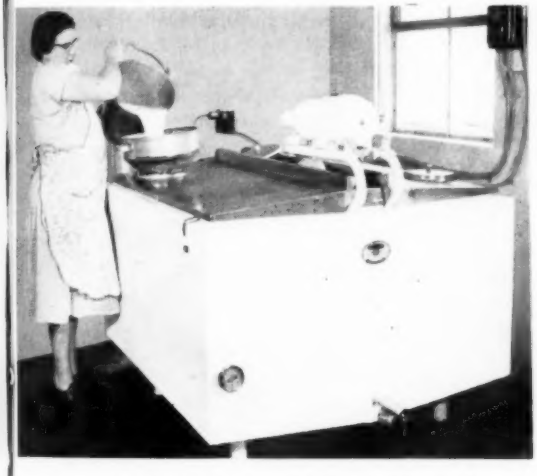
2. *Inside Lining:* All welds on inside lining and breast shall be ground smooth and polished to a finish not

***The requirements for measuring devices are contained in an appendix. Inasmuch as they are the same as, although in less detail than, the requirements set forth in the Tentative Code adopted by the National Conference on Weights and Measures printed on pages 44, 46, 48, we did not print them here.**

There IS a Difference in Farm Cooling Tanks!

3 BIG REASONS why Practical Dairymen Choose GIRTON—

Here are the reasons why the majority of dairymen everywhere prefer the Girton Farm Cooling Tank. These important reasons mean less labor on the dairy farm, more value for each dollar invested and better milk delivered to the dairy.



Available in sizes from 100 gal. to 1000 gal. either in Stainless Steel or Baked Enamel exterior.

Conforms fully with the 3A Sanitary Standards

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• MILLVILLE, PA.

1 The Girton Tank Is Built Low!

The farmer, his wife and family, like it because it is easy to use and easy to wash. No high lifting. The sanitarian likes it because it is easy to keep clean. Every part is accessible.

2 It's the Lowest Price Tank in the Long Run

Heavier materials — more modern design — better construction — make it the most economical tank to own and operate. The 10 Gauge bottom is long-time insurance against dents and nicks, with their accumulation of milk stone and bacteria troubles.

3 It Cools Faster

Fast, sure cooling means better milk. Direct cooling by full flooded freon assures you day-by-day maintenance of milk quality. Jet injection freon controls mean no moving parts, no thermal expansion valve, no maintenance.

Girton Mfg. Co., Millville, Pa.

Please send full information about the Girton Farm Cooling Tank. No obligation, of course.

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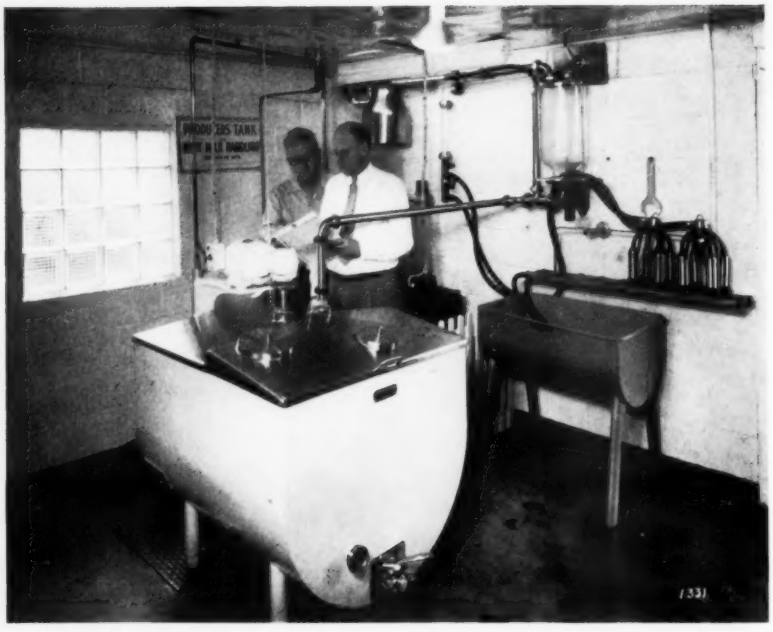

Milk handling problems, public health questions, engineering and construction considerations are all factors that must be considered in setting up standards for equipment. Their purpose, however, is not to restrict but to encourage. This milk room with its bulk tank and pipeline milker is a good example of the goal.

less than the adjoining surface. All inside corners of bottom, sides, and ends of the inside lining shall have radii of not less than ½ inch. All inside corners of permanent attachments welded to the inside lining shall have minimum radii of ¼ inch. The inside lining shall remain in a fixed position relative to the outer shell or body of the tank, and shall be of such construction that it does not develop any sag, buckle or become distorted under load, or from any other condition of normal use, that would affect the correct measuring of the contents by the measuring device.

The inside lining, with or without longitudinal trough on the bottom, shall be pitched to outlet to effect complete drainage.

3. *Outer Shell:* All exterior seams of the outer shell shall be sealed against moisture and vermin. Unless of corrosion-resistant material, the entire exterior surface shall be painted and shall be reasonably smooth.

4. *Insulation:* Shall be so installed that it will minimize the change of position of material which may produce voids.

5. *The Breast*, or that portion of the metal used to joint the inside lining proper to the outer vertical wall, shall be integral with or welded to inside lining, and shall be sloped or so arranged that all drainage will be toward the outer edge of tank.

6. *Covers, Bridges and Doors:* (a) Main covers or doors shall be of type which can be opened without removing, and shall be self-draining. Covers or doors shall be provided with a minimum of ¾ inch flange type protection on all edges, and shall fit as tightly to the tank as practical. When covers or doors are in the opened position, any liquid from the inner or outer surfaces shall not drain into the milk compartment.

(b) Fixed covers located at ends or sides of tank shall not extend more than 12 inches over the surface of the milk and shall have a minimum of ¾ inch raised flange. Fixed covers shall be so installed that the underside of same shall be visible from the outside of the tank.

(c) Bridges shall not exceed 24 inches in width, shall be pitched to outside edge of tank for complete drainage, and shall have a minimum of ¾ inch raised flange where edges meet main covers. Bridges shall be so installed that the underside of same shall be visible from outside of tank.

7. *Openings:* The edges of all openings in the covers or bridges shall be flanged upwards at least ¾ inch. Openings not continually in use shall be provided with removable covers.

(a) Main covers when fitted for using standard milk can strainers shall have openings with a rim which will properly support the strainer. Such covers for tanks up to and including 150 gal. size, shall be provided with at least one strainer opening; covers for tanks larger than 150 gal. shall be provided with at least two strainer openings. A removable cover shall be provided for each strainer opening, which shall be self-draining to outside edge of cover, and shall have a downward flange of not less than ¾ inch. Cover shall be provided with handle or knob, and same shall be welded in place and weld ground smooth.

8. *Thermometers:* One indicating thermometer shall be furnished with each farm tank, with a minimum range of 32° to 100° F., scale divisions of not less than 1/16″ per 2° and accurate to plus or minus 2° F. at 50° F., protected to withstand temperatures of 0° to 212° F. without damage to accuracy, and shall be so located and installed as to permit registering the temperature of the contents when tank contains not more than 20 per cent of the calibrated capacity of the tank. Thermometer shall be one of the three following types:

(a) Bulb may be securely fastened in place to outside surface of inside lining, with bulb system connected to thermometer case.

(b) Side or end wall inserted type may be of well type construction when well proper is of 18-8 stainless steel and is welded to inside lining with a ¼ inch minimum radius.

(c) Cover or bridge inserted type shall conform to 3A Sanitary Standards for Thermometer Fittings.

9. *Outlet Connection:* The outlet connection shall be sanitary in construction, readily cleanable, with minimum inside diameter of same equal to that of 1½ inch sanitary piping and shall be one of the following types:

(a) Horizontal Outlet Connection: That portion of the metal used to convey product from inside lining to exterior of tank shall be in a generally horizontal position, with the lower surface of same level or below surface of inside lining bottom and pitched for drainage, and in no case shall the connection be below the exterior bottom of tank. The horizontal outlet pipe

His M-1 Jammed!

Corporal

Rodolfo P. Hernandez, U.S. Army

Medal of Honor

0200 HOURS! Suddenly the pre-dawn blackness on Hill 420 split into crashing geysers of orange flame. Behind the barrage, yelling, firing, hurling grenades, a horde of Reds pushed up the hill toward G Company's position.

A hot fire fight began. It lasted several hours. Finally, suffering heavy casualties, G Company began to withdraw. Corporal Hernandez stayed, throwing grenades and firing his remaining rounds.

Then his M-1 jammed, with a ruptured cartridge in the breech. Fixing his bayonet, he leaped out of his foxhole and disappeared in the darkness toward the attacking Reds. They found him in the morning, wounded, ringed with enemy dead. But he had stopped the attack—*alone.*

"A man couldn't fight at all," says Corporal Hernandez, "if he weren't fighting for good things—peace, and a job, and a chance in the world. That's why I'm thankful to all the people like you who've put so many billions into Bonds. Bonds help fight Commies, sure. But they're also a stockpile of prosperity—for you; for our country. A guarantee to men like me that we can come home to a secure future."

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Peace is for the strong! For peace and prosperity save with U.S. Defense Bonds!

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PRODUCER THINKING ON FARM TANKS

A GOOD example of producer thinking on farm tanks was contained in a series of interviews conducted by the Fond Du Lac Commonwealth Reporter on August 14 at the Fond Du Lac County Fair. The interviews were conducted among farmers inspecting a model milk house and farm tank on display at the fair.

Robert Butler of Eldorado, and Ralph Weisser of Rosendale were standing in the dairy barn to which the model milk house is attached, discussing farm topics.

"It's something comparatively new, right now," Butler commented when asked for his opinion. "In times to come, though, I imagine it will be the thing."

Weisser, who has eight head of dairy cattle, thought that "it will be slower than some other things. For a farm with 25 to 30 cows it's all right but for a little one-horse one like mine . . . well, I don't know."

Near the middle of the barn the newspaper reporter introduced himself to John Collier, agricultural instructor at Campbellsport High School:

"I personally think that the bulk system of handling milk is going to be the thing of the future," Collier stated, adding, however, that he felt "it isn't practical for all dairy farmers today. They are not in position to switch over completely but will gradually, I'm sure."

Fred Voight of Ripon, who said he was "partly retired" from farming, made this general comment for dairy farmers:

"If I had the money for this equipment, I would go to work and put it in."

Voight also reported that a cousin, Harold Goodlaxon, of Oakfield, just constructed a new milk house and that he had the bulk system cooler installed and thinks that it is "wonderful."

Farm tanks are not confined to milk scheduled for fluid use. In many areas of the country, manufactured milk is also being handled by the bulk method. This picture was taken at the Fond Du Lac County Fair where a model milk house containing a farm tank was on display.

may be provided with 3-A Sanitary Standard fittings, but the fittings shall not extend more than 2 inches beyond the outer shell of tank.

(It is recommended that all tanks be provided with 1½ inch sanitary outlet connections for uniformity and thus aid the milk hauler.)

(b) When milk is removed through the top of the tank, the sanitary pipe shall be not less than 1½ inch O.D. with bottom end of same located in a suitable well with an outlet as described in B-9a, for drainage.

(c) Vertical Type: The vertical centerline of the vertical outlet which extends through bottom of outer shell, shall be as close as practical to an adjacent wall, and shall terminate with a 90° ell that is integral with the outlet. The horizontal centerline of the ell shall be not less than 4 inches above the floor.

10. *Valve:* Valve shall be sanitary in construction, readily cleanable, and shall be one of the following types:

(a) Close coupled compression type with no stuffing box.

(b) Direct connected sanitary valve complying with 3-A Sanitary Standards for Fittings.

(c) Close coupled, flanged type plug valve.

Threaded terminals on outlet connections shall be provided with a 3-A cap that will cover all threads when tightly in place.

11. *Distributors:* A distributor used to spread the product over cooling surface that is part of the lining shall have all milk contact surfaces visible to sight, easily accessible, and readily cleanable when in operation position or removed.

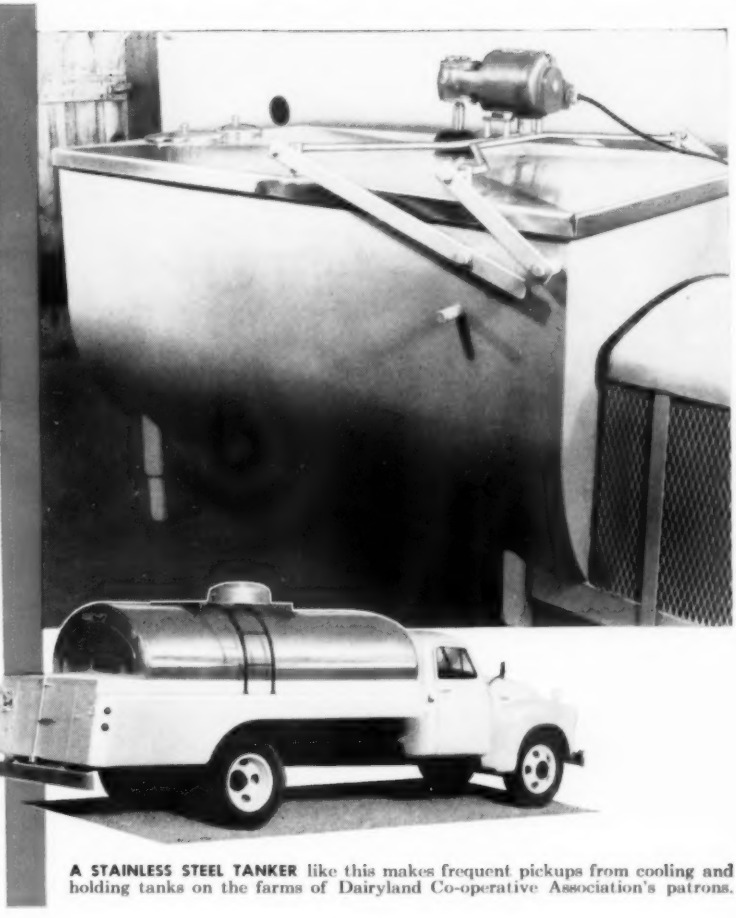
12. *Legs:* Adjustable legs with sealed bases shall be provided of sufficient size and spacing to carry the tank when full, and to raise the tank sufficiently high to allow for adequate draining, and attachment of fittings. Leg socket exteriors shall be substantially corrosion resistant and readily cleanable. Paint on non-wearing surfaces is considered acceptable. Legs shall be of suitable length to provide a 6 inch minimum clearance between floor and bottom on tanks up to 72 inches in diameter or width, except in the case of V-bottom or round bottom tanks where the outer shell of the tank slopes continuously upward from the outlet centerline, in which case the minimum clearance may be 4″ if it increases to 6″ within a horizontal distance of not to exceed 12″ on each side of this centerline. On tanks over 72″ in diameter or width, the minimum clearance shall be 8″. Adequate means shall be provided on all adjustable parts so they can be sealed by local authorities, in such a manner that their position cannot be changed without disturbing the seal or seals for the purpose of maintaining the level and location of tank approved at time of calibration.

13. *Agitators:* Agitation shall be provided of sufficient degree to assure homogeneity within five minutes of operation, and so that the fat content determining at different levels in the tank and at extreme distances from

(Please Turn to Page 82)

Bulk milk handling in Stainless Steel tanks pays off for processor and patron alike

FREDERICK HOLZHEUTER checks the amount of milk in his Stainless Steel farm tank as Harold Olson, Director of Procurement of Dairyland Co-operative Association, watches.



THIS VIEW of the Stainless Steel tank on the Holzheuter farm shows the cooling unit and motor which drives the agitator.

THE bulk milk handling system—combining Stainless Steel refrigerated farm tanks with pick-ups by Stainless Steel tanker—offers real savings to both the dairyman who produces the milk and the processor to whom he sells.

To the dairyman, this system means less heavy, time-consuming labor; quick, easy clean-ups; weights and butter-fat samples taken on the farm in his presence; and better quality milk. To the processor, it means lower receiving room costs, better processor-patron relationships and, of course, better quality milk.

The bulk handling system is being used by Dairyland Co-operative Association of Juneau, Wis., and some of its patrons. Harold Olson, Director of Procurement of Dairyland Co-operative, says, "I like the quality milk that results from bulk handling. The use of an easy-to-clean bulk cooler promotes better housekeeping around the milk house and dairy barn."

A STAINLESS STEEL TANKER like this makes frequent pickups from cooling and holding tanks on the farms of Dairyland Co-operative Association's patrons.

And one of Mr. Olson's patrons, Frederick Holzheuter of Hubbleton, Wis., adds, "I like my Stainless Steel bulk tank because it is well-built and cools fast. My wife does the wash-up of the tank and she can easily lift up the cover and reach all parts of the tank for thorough cleaning. In an emergency, she can do the complete milking without heavy lifting."

If you are interested in a bulk handling system using Stainless Steel tanks, we will be glad to supply you with information which we have acquired in working with our customers who manufacture Stainless Steel farm tanks. Write to Agricultural Extension Section, United States Steel Corporation, Room 2816-B, 525 William Penn Place, Pittsburgh 30, Pa.

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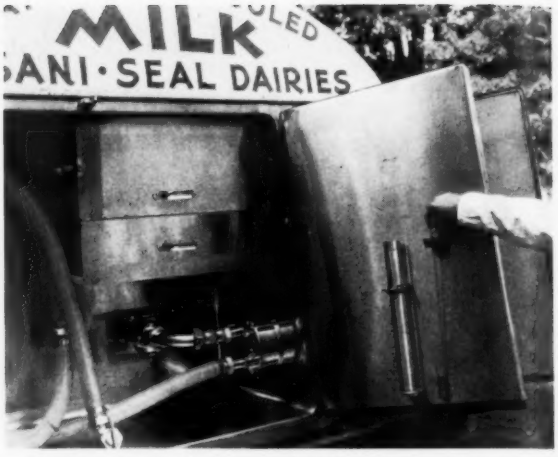
UNITED STATES STEEL

XUM

Charles Shuler (right), Director of Field Service for the Saginaw Dairy Company and one of the company's contract "tanker" haulers, stands beside a farm tank pickup truck. Note the use of two compartments in this arrangement. Note also the use of a hose rack and the tube for the sampling dipper.



This picture shows the tube developed by Donald W. Foster of the Saginaw Dairy Company, Saginaw, Michigan. The tube contains a sterilizing solution in which the sample dipper is immersed while the truck is moving from one stop to another. Note the plug near the top of the dipper handle.

Bill Bryant has visited and photographed bulk handling operations from California to Connecticut. He found—

EACH ONE A LITTLE DIFFERENT

By C. B. A. (BILL) BRYANT

Exclusive feature
AMR

During the short time farm tank programs with tanker pickup have taken hold, outside of the concentrated Grade A fluid milk producing areas of California and Florida, I have taken amateur color movies at twenty-four different locations. These cover typical installations in our United States from the Atlantic to the Pacific coasts and from Mexico to Canada. They range from member milk plants of our largest fluid milk organizations to small independent milk companies having but a few patrons. Some are milk organizations now receiving their milk 100% from bulk farm tanks. One is a manufacturing milk handler, making specialty cheese. They include dairy farms of large milk producers with excellent showplaces, equipped with elaborate tiled milk rooms, as well as small struggling dairymen with remodeled chicken coops as stanchion milking barns but with well-designed milk houses. Size of bulk farm tanks runs from 50 gallons to 800 gallons.

The popularity of this subject has been such that the author to date has shared these experiences by portraying and narrating his amateur color movies with public and private groups all over the United States. The showing and narration was given 169 times during 1952 and 87 times so far in 1953 (seven months). This may be considered something of a barometer of the interest and popularity of this subject.

Many makes of bulk tanks are used. Some makes frequently recur. Some operations have more than one hundred farmers using the same make of bulk tank. It has been noted that most bulk tank manufacturers have learned by doing and have incorporated into their later models several new features. However, dairymen with bulk farm tanks that I visited four years ago are still using the same equipment they had then. They are very satisfied and continue to produce very high quality milk.

In the four short years of being an amateur color movie photographer of this subject, it has been amazing to note the rapid progress that has been made. I have made especial note at each new location being photographed what it might have which my observations had not included in former pictures. I speak of those valuable additional tools for convenience and sanitation not noticed before. In this way, I feel I might give others valuable ideas as well as the pleasure of witnessing an interesting travelogue.

These items and articles I give you in this story.

FIRST: I found a great variety of plug ends on the capping of the hose used for transferring the milk from farm tank to pickup truck. A flat plug end or a screw plug with round wheel handle might be set down in an unsanitary place, when removed from the hose—the milk house floor, for example. Dean Milk Company of Rockford, Illinois, under the direction of Director of Field Service J. H. (Jim) Davis, devised a handle for this threaded plug consisting of a 4" square piece of solid metal ½" thick on a 4" long stem. This it could set on a bulk tank top or on the milk

How J. D. Roszell of Peoria, Ill., got . . .

14 TONS OF EXTRA BUSINESS . . IN 30 DAYS!

Here's the sweetest cottage cheese story ever told! It happened in Peoria to J. D. Roszell Inc., a unit of National Dairies (Sealtest). And what a story it is!

Packaging Sealtest Cottage Cheese in 2 lb. Lily* Containers on a trial basis, Roszell sold 14 thousand units (28 thousand lbs.) of cheese within 30 days. Above all, *these 32 oz. containers did not affect the sale of regular size units in any way.* That means 14 tons of EXTRA business!

An exciting story indeed. But just one example of the outstanding results being reported from dairymen everywhere who are now using Lily 2 lb. containers to package their fine-quality cottage cheese. It's possible that you too can build *big extra business* with these sturdy, smart looking containers.

The attached coupon will bring you samples and complete information — without obligation.

*T.M. Reg. U.S. Pat. Off.

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Gentlemen:
Please send samples and complete details on the Lily 2 lb. containers at once.

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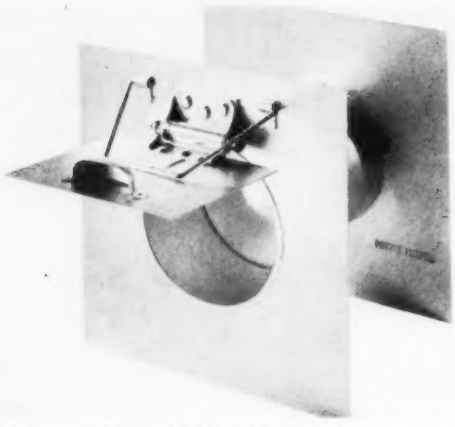
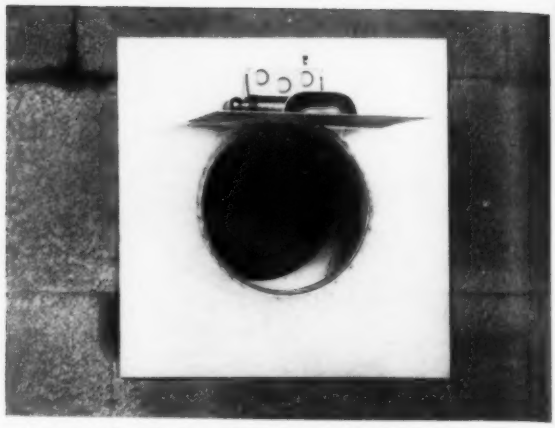


This is a milk house wall fitting for the transfer hose. The attachment, fitted with a self-closing door, becomes a permanent part of the milk house. There is substantial objection to introducing the hose through the regular milk house door.



Picture on the left shows the complete self-closing hose entrance. Picture on the right shows the door as it appears when installed in the milk house. These doors are seen quite frequently throughout the Northwest on Oregon and Washington farms.

floor, so that the threaded plug would be up in the air. Thus the threads of the plug could not be so easily contaminated before being rescrewed into the end of the hose after each farm pickup stop.

SECOND: I noted that a young senior laboratory technician, Donald W. Foster of the Saginaw Dairy Company, had added a unique feature for sanitary control of the dipper used by the hauler for taking daily butterfat and bacteria samples. This consisted of a 1½" stainless steel pipe about 2' long, capped on one end and conveniently held with turn knuckle clamps on the inside door of the pump cabinet of the tank truck. This was kept filled with a sterilizing solution. The dipper, after rinsing at each farm, was carried in this tube between stops. On the dipper stem was a rubber cork that fitted the 1½" pipe to prevent leakage of sterilizing solution when the truck was in transit. This tube, held to cabinet door by turn knuckle screw clamp, is easily taken off at the milk plant for cleaning and refilling.

Charles Shuler, Director of Field Service for the Saginaw Dairy Company, is now a seasoned authority and veteran on this bulk farm tank subject. His company's Midland, Michigan plant is 100% farm tanks with tanker pickup. They have eliminated their milk receiving room at the plant and have installed, after remodeling, a cottage cheese vat. They also operate one route each into their Bay City and Saginaw, Michigan plants. Recently, on a State Farm Management Tour, August 6, 1953, one of their farmer patrons with a bulk farm tank was visited by over 600 farmers. I quote a passage from the August, 1953 issue of the Michigan Farm Economics Cooperative Extension Service, Michigan State College, describing this Farm Management Tour.

"Henry Hertzer and Sons Farm: Here you will see a father and two sons earn a good living for three families on 176 acres. The farm organization is built around a herd of Guernsey cows. Of special interest are bulk handling of milk, pen-type barn and milking parlor, mow drying of hay, and bulk handling of fertilizer." Charles Shuler of Saginaw Dairies, answering questions during the visitation at this farm, said: "I sold more farm tanks this day than we now have in operation." Here is the data prominently set forth on a large sign in this spacious, immaculate milk house: 30 Cows @ 10,000 lbs. = 300,000 lbs. 300,000 lbs. @ 22c = $660.00 annual profit.

Will It Pay?

3c cwt.–higher price
6c cwt.–higher test
5c cwt.–greater volume
6c cwt.–lower hauling cost
2c cwt.–less can expense

22c cwt–more profit.

NO CANS TO LIFT.

THIRD: On my many visits to dairy farms having this system, various entrances in the milk house walls for the tanker hose have been photographed. In several places (too many), the entrance was through an open door. When recording the Carnation fresh milk operations at Mt. Vernon and Ferndale, Washington, it was observed that under the leadership of the District Fieldman supervisor, R. M. Jones, and the local fieldman, "Dutch" Wilson, this problem was solved by installing a special, convenient, closed entrance on the milk house wall. In the northwest, near the Pacific coast of both the states of Oregon and Washington, many milk organizations are making a big business of the change-over of all their Grade A shippers to bulk farm tanks. This closed entrance feature is being well handled. The milk haulers in this area are, for the most part employees of the milk companies. When any farmer changes to bulk farm tank system, his milk continues to be picked up by an employee of the milk company receiving his milk.

FOURTH, Sediment Testing: One of the large leading milk organizations in Washington, a member of the Consolidated Group for marketing its products, is the Skagit Dairymen's Co-Operative Association of Burlington. The Skagit Company is under the very able leadership of P. A. Cornelius. I was informed, at the time of photographing their bulk farm tank operation, that all the tank milk was going to the Lucerne Milk Company of Seattle for distribution in Safeway Super Markets.

The Lucerne personnel had worked out a sediment testing system for these bulk farm tank dairymen. Each day the tanker hauler takes an agitated pint sample from each farm tank of milk. From this, a sediment is run weekly at the milk plant laboratory.

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6 S	6 Sq. Quart Bottles	6	.60
4 R	4 Rd. Quart Bottles	10	.41
2½ SR	2 Sq. or Rd. ½ Gal. Bottles	10	.41
2½ O	2 Oblong ½ Gal. Bottles	10	.41

Lightweight
Sturdy
Rust-Proof
Plated Finish
Sanitary
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Handy
Attractive

LOW COST

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Snap-Tite Neoprene Gaskets • "SLIP" Chain Lubricant

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Low Cost • Reusable • Neoprene • Leak-preventing

TIGHT JOINTS. Neoprene Snap-Tite gaskets are formed to exact shape and the highly polished surfaces hug fittings smoothly . . . provide tight joints.

MORE SANITARY. The specially-formulated, odorless, non-porous Neoprene is impervious to fats and heat . . . withstands the same sterilizing solutions used for fittings.

MORE ECONOMICAL. Snap-Tite Gaskets are self-centering . . . save time in assembling fittings to line . . . prevent costly leaks . . . help overcome destructive line vibration . . . eliminate troublesome line blocks . . . never stick. Snap-Tites are designed to be used over and over.

TESTED AND PROVEN. Snap-Tite Gaskets are molded from a special Neoprene compound developed by several years of testing. This compound insures a gasket that will not swell nor become soft and gummy in use. You can identify genuine Haynes Snap-Tite Gaskets by the letter "H" molded on the inner ring. For complete satisfaction specify Snap-Tites.

CHECK THESE ADVANTAGES

Tight Joints • Sanitary • Non-porous • Odorless • Withstand sterilization • Time-saving • Self-centering • No sticking • Eliminate line blocks • Help overcome line vibrations • Long life

Available for 1", 1½", 2", 2½" and 3" fittings.

Packed 100 to the box. Order through your dairy supply house.

THE HAYNES MANUFACTURING CO.
709 WOODLAND AVENUE • CLEVELAND, OHIO

HAYNES *Snap-Handles*

PATENT PENDING

HALF-GALLON BOTTLES *are Easy-To-Carry with* HAYNES SNAP-HANDLES

ATTRACTIVE • CONVENIENT

- BRIGHT NICKEL FINISH
- SNAP ON and OFF EASILY
- HOLDS SECURELY
- STURDY—SPRING STEEL CONSTRUCTION
- BOTTLES WITH SNAP-HANDLES CAN BE MACHINED WASHED
- WILL FIT SQUARE—OBLONG—ROUND HALF-GALLON BOTTLES 38mm.—45mm.—48mm.—51mm. REGULAR OR DACRO FINISH WITH BUMPER ROLL
- ***LOW COST***

HAYNES 9¢ *each*

F.O.B. CLEVELAND, OHIO
PACKED 100 TO CARTON
ORDER FROM YOUR DAIRY SUPPLY JOBBER

THE HAYNES MANUFACTURING CO.
709 Woodland Avenue • Cleveland 15, Ohio
ROLL-EASY DOLLIES • ROLL-EASY CASTERS • TABLE CARTS • CAN CARTS • CARRY-BASKETS
SNAP-TIGHT NEOPRENE GASKETS • NEOPRENE COVERED WRENCHES • "SLIP" CHAIN LUBRICANT

XUM

Dairymen's League Cooperative Association branch at Buffalo, New York uses these bags of frozen chemicals to keep samples cool. This picture of the rear cabinet on the pickup tanker shows the chemical bags in a tray over the sample bottles. These bags last about twelve hours, then are refrozen and used again.

S. E. (Sam) Graham, manager of the Truck Department, Dairy Cooperative Association of Portland, Oregon, stands beside one of the Association's snub-nose tankers. Directly behind the cab can be seen the accessory compartments. The first houses the samples; while the second houses the pump, motor, electric cord, and a shift for direct drive on truck motor, if desired.

A sediment tester using a linteen sediment test disk is used. The grading system is ten points for a perfect disk—no specks; 9 points—1 speck; 8 points—2 specks; 7 points—3 specks, and a set degrading price discount from the price of milk for any sediment test of 7 points or less. They have found (as I have likewise been told by other milk companies) that all bulk tank shippers are good housekeepers. Very few have an undesirable sediment score. These Skagit people by now have over 200 bulk farm tank shippers and expect to have all of their Grade A people 100% farm tanks very soon.

FIFTH: A new, quite different pickup truck or tanker, the snub-nose tanker with the cab over the engine is used in Oregon. I am pleased to introduce S. E. (Sam) Graham, Manager of the Truck Department, Dairy Cooperative Association, Portland. Mr. Graham has developed the details of this tanker pickup business more completely than any one I have met. He has given it considerable study under carefully checked experiments, specifically checking hauling costs. His principal contribution to bulk tank pickup at the farms is an 1,800-gallon snub-nose tanker. Sam Graham states that with their snub-nose tankers they can make a $2.00 saving on each route. This is due to the roads and hilly terrain characteristic of the part of Oregon where they operate. The saving is in the hauler's time at each stop. The trucks are reported to be very maneuverable. Sam Graham plans in the near future, as they go beyond 300 farmers with bulk farm tanks, to have a fleet of these snub-nose tankers. These trucks will bring milk to a 3,500-gallon semi-tanker and a 3,000-gallon tank trailer at a set station some miles from Portland. The milk will be transferred from the small pickup tanker to the big trailers. One hauler will then bring this big supply of milk on into their fluid milk plant at Portland. Truly a business is being made of this new system of milk handling at the farm level in this area of the United States.

SIXTH: Each plant has its own method of icing the compartment or trays on the tanker which carry the butterfat and bacteria sample bottles taken by the hauler. I have seen much inconvenience caused by water from the melting ice. I noticed a practical new method of icing when I was photographing routes of the Buffalo Branch of Dairymen's League Co-Operative Association, New York City. This method, I understood, was introduced by Larry C. Maxwell, the efficient assistant Buffalo manager. The device is a wiener-like bag about a foot long and five inches in diameter, containing a chemical element. Several of these wiener-shaped bags are used in each tray. They are simply frozen in the deep freeze at the milk plant. They hold their freeze for some twelve hours, then are refrozen and reused. There is no melting ice and resulting water to drip from trays. I was told each bag lasts almost indefinitely.

At Washington, D. C., introduced by James (Jim) B. Smathers, supervising bulk handling for the Maryland-Virginia Milk Producers Association, I found another way of caring for these daily samples from each dairy farm. Each driver of the tankers carried a small metal box which looked like a fisherman's tackle box. This had a padlock on it. A rubber-corked small glass bottle was provided for each farm sample. When the route was completed, this box was locked by the hauler and delivered to an independent Washington, D. C., laboratory. There it was tested and the results sent to the farmer, the plant receiving the milk, and the Maryland-Virginia Milk Producers Association.

Other milk organizations, as they start and progress with this method of handling their milk supply, have used the experiences they have gained from others, plus their own ingenuity, to improve their daily operation. They have constantly kept in mind sanitation, labor saving, and convenience. Bryant Chapman of Hartford, Connecticut; Edisto Dairies, Columbia, South Carolina; Lynden Dairy Products, Lynden, Washington; Borden, Dayton, Ohio; River Falls Co-operative, River Falls, Wisconsin; Purity Cheese Company, Mayville, Wisconsin; Irona Creameries, Champlain, New York; Watcum County Dairymen's Association, Lynden, Washington; Golden State in California; The Challenge organization of California; Wisconsin University; Michigan State; and others I have photographed, all are eagerly sharing their varying experiences with visitors. They have contributed much to the progress of this system, each being alert to learn by doing. Each acting promptly to make changes for improving their operation.

How thousands of dairies have flattened their storage problems!

500 CONTAINERS IN 1.3565 CU. FT.

Dairymen coast to coast have discovered how little storage space is required for International Pure-Pak milk container "flats."

They've also discovered extra value. International Pure-Paks are quality controlled all the way—from seedling to tree to pulp to finished product—the finest milk container money can buy!

International Paper COMPANY

SINGLE SERVICE DIVISION

220 East 42nd Street, New York 17, N. Y.

XUM

INDUSTRY PROBLEMS

by R.F. Holland and J.C.White

Designation of Grade of Milk
Standardizing Milk

Designation of Grade of Milk

QUESTION—How must our paper bottles be marked to meet the labelling requirements? Is there a specified size of letter and form for each grade? Do we need to use specific colors for different products?

—C. I., New York.

ANSWER — Unless bottled milk moves in interstate commerce, it is not required to meet standards of the Federal Food and Drug Act.

What markings it does need are defined by the various state or municipal health codes. In your state, each container must be marked with the grade designation, such as "Grade A Pasteurized" and with the name and address of the dealer.

The grade designation must be inscribed in a specified form, not less than three-fourths of an inch wide nor more than three inches wide. A print of the approved form can be obtained from your state health department.

Since this is a relatively new regulation, it is the intent of the officials that unless present caps or containers are seriously different from the approved form, they may be used until such time as new dies are cut. This applies to paper bottles.

The courts have ruled that a glass milk bottle itself need not be identified in any way as containing milk. The cap constitutes the label, and must meet the labelling requirements. On paper bottles, the grade designation should be conspicuously exposed so that the customer has no difficulty in recognizing the product.

As we understand it, the labelling should conform in its alignment, the letters themselves might be as small as one-fourth inch high, and it must be placed so the customer can see it. Nothing prevents marking the cap itself if it is sufficiently large.

Standardizing Milk

QUESTION — In standardizing skim milk to 1.5 with 40% cream, the final test is generally higher than we want. How can we approach a solution to this problem?

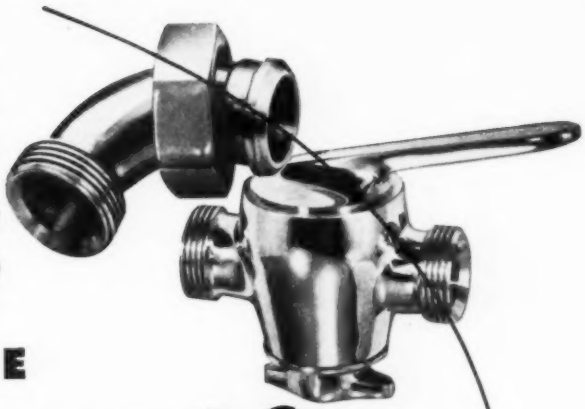
—S. M., New York.

ANSWER—From the limited information that you have given us, it is impossible to tell exactly what your trouble may be. However, perhaps we can give you some hints that may be helpful. It is a regular laboratory exercise in our dairy courses to require students to standardize skim milk to certain fat percentages using 40% cream. Generally speaking, they can do this within 0.1 of 1% and no systematic error has ever appeared. It would therefore appear that the difficulty you are experiencing lies either in the testing of the cream or in the method of calculating the quantities of each ingredient to be mixed to make the 1.5% skim milk. In the testing of the cream, you must be certain that the cream charge is accurately weighed, that the finished test is tempered to 135°-140°F. for five minutes before reading, and that the test is read with glymol or meniscus remover. We know of instances where operators simply pipette their cream samples for the cream test and do not weigh them. This will definitely lead to errors, but these errors are generally on the low

(Please Turn to Page 74)

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review." Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

FREE POSTERS



TO STIMULATE
Better Equipment Care
IN YOUR PLANT

Sanitary equipment repair and replacement costs are often unnecessarily high due to carelessness or lack of employe "know-how." Damage and breakage *can* be drastically reduced by stimulating the worker's pride in his job, appealing to his sense of fair play and by demonstrating proper equipment handling methods.

So, to help you cut your costs, to make your equipment last longer and give you trouble-free service, A-P-C offers you a set of 12 different posters (one will be sent each month) — *all without charge of any kind.* These posters are 11 x 14 inches — just the right size for your bulletin board.

We hope our effort will help you in your equipment maintenance problems.

suppose YOU were stuck with this needless Replacement Bill . . .
$204.00
$39.95
INVOICE
$253.95
$10.00
EXTRA CARE IN EQUIPMENT MAINTENANCE IS A SURE SIGN OF A GOOD CRAFTSMAN AND IS YOUR BEST INVESTMENT IN YOUR PROGRESS AND SECURITY.
A-P-C Sanitary Fittings

"The first poster in the series of 12 is shown above. It will be mailed to you shortly. If you want more than one poster each month for different plant locations — just let us know. We'll be glad to supply as many as you need."

Mr. Hi Shine

ALLOY PRODUCTS CORP.

Craftsmen in Stainless Steel

1065 PERKINS AVE. - : - WAUKESHA, WISCONSIN

Milk and Milk Dealers

By LUTHER A. KOHR

NEARLY EVERYONE in the dairy industry agrees that a better job of public relations needs to be done, and usually thoughts are in the direction of the daily newspaper. Probably they are the chief culprits.

When the daily newspapers are straightened out, maybe we should turn our sights on the magazines and on some public health officials.

We note the newspaper headlines gained by State Milk Marketing Administrator William S. Weidel of Oregon in Oregon newspapers recently when he announced the beginning of a crackdown on violators of the state milk control code.

The occasion for the publicity was not that Mr. Weidel had arrests and convictions to report.

The newspaper stories read: "Notice was served on Portland milk distributors and retail grocers that the state milk marketing administration intends to start strict enforcement of its fair trade practice . . ."

The story went on to state that "on the forbidden list will be unrestricted sampling, granting of wholesale prices to households, gifts and cash rebates to grocery stores, discounts and price cutting and discriminatory pricing of ice cream and related products to get a store's milk business, loans of money and free refrigerators and store signs to stores."

The story added that many of the above practices have become more or less standard operating procedure to meet competition.

There has been a state milk control act in Oregon for some time, but only recently was the act amended to give Administrator Weidel power to levy fines up to $350 for each violation of its rules. Heretofore, the penalty was revocation of license.

However, most people reading the story will not appreciate what a sad state of affairs exists in Oregon, if all of the statements in the news story are correct, because licenses were not revoked, but most people will remember the intent which the news story wanted to convey: that there are nothing but chiselers in the dairy industry.

Often we hear of milk dealers who make a sincere effort to find out the exact reason why each customer they lose stops doing business with them. Almost as often, however, we hear of a dairy making no effort at all to find out why a customer quits.

In Boyertown, Pa., Paul Carver, Jr., a member of the firm of Carver's Dairy, personally visits every customer who stops and has a friendly chat and oftentimes straightens out some misunderstanding. Larger dairies have sales supervisors make calls or sometimes send out letters with business reply card enclosures.

Back of every lost customer is a reason for quitting. Often, when the facts are known, the customer comes back.

For obvious reasons, we'll have to omit names, but in this large mid-western city where the union has the milk route salesmen well organized, and where management considers it almost the most unpleasant task conceivable to tangle with the union, a route salesman, whom we will call Doe, with many years of seniority had just about the choicest of the dairy's seventy or more routes. The route was in an outlying section where new homes were being built by very well-to-do people.

For nearly a year the sales manager had noticed that Doe never got any new customers; the only new business ever secured for this route was solicited by management or came in on the 'phone voluntarily or was transferred from other routes.

The sales manager believed that it was because Doe was too much of a busy-body; that Doe just talked too much.

One day Doe reported that a certain customer, whom we shall call Mrs. Blank, had quit. Mrs. Blank was one of the dairy's oldest accounts, also one of its largest retail accounts. Mrs. Blank's husband was in the insurance business, but the dairy did not do business with Mr. Blank, and Doe dreamed up the tale that Mrs. Blank quit because the dairy did not do business with her husband.

In checking with Mrs. Blank, the dairy learned just what it suspected—that Doe talked too much.

Mrs. Blank said that two happenings within the space of forty-eight hours had caused her to decide she would have to stop doing business with the dairy as long as Doe serviced her route.

She said that one afternoon she attended a party for a newcomer to the neighborhood, and when she was introduced, the newcomer said, "Oh, so you are Mrs. Blank. I feel I know you very well."

Somewhat flustered, Mrs. Blank asked who their mutual acquaintance was and the newcomer tactlessly, but honestly, blurted out, "Oh the milkman has told me all about you."

Two mornings later, Mrs. Blank said that her maid demanded a two-dollar a week raise because the lady across the road was paying her maid that sum.

"How do you know?" Mrs. Blank said she asked her maid, and the maid replied, "Why the milkman told me so."

When the dairy's sales manager called Doe in for a session, Doe at first denied it all. But when the sales manager told Doe that he intended to fight the thing through to a finish with the union unless Doe relinquished the route voluntarily, Doe did so and now, some months after this incident, is trying to do a better job of keeping his mouth shut, but in a less lucrative section of the community.

When B. F. McDaniel, the new sales manager at Tro-Fe Dairy in Gadsden, Alabama, decided to use write-ups of his milk route salesmen in the monthly newspaper Tro-Fe Dairy mails to all its customers, he was somewhat dubious of how interesting the interviews could be made.

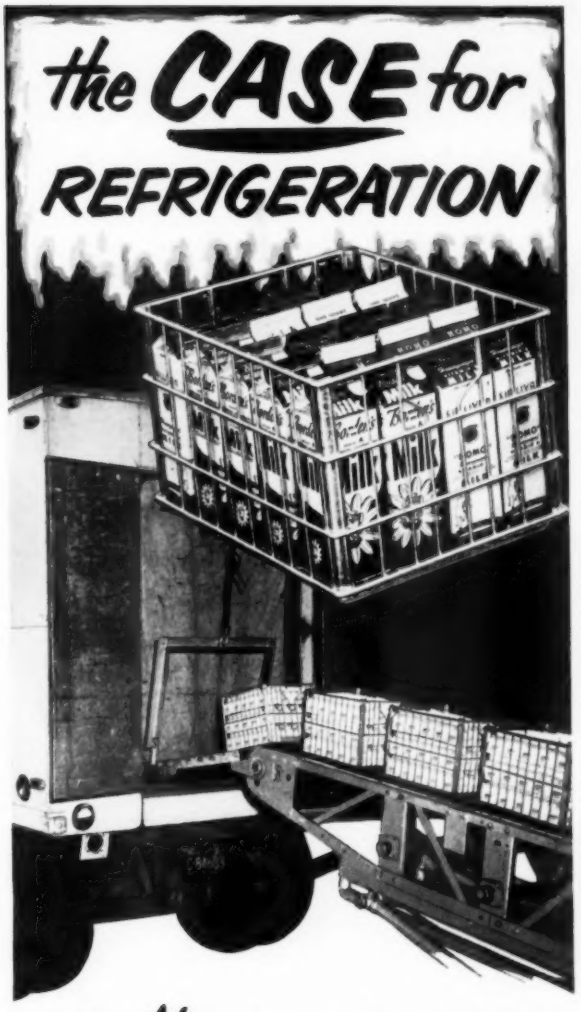
But after spot-checking five men, he realized that there were many interesting things about his route salesmen. Of the five checked, one was an aspirant for the lefthand golf championship of Alabama, shooting consistently in the low 70's; another had held office in the Masonic lodge for the past five years; and a third was a deacon of his church, Sunday School superintendent and choir director.

Certainly these men, and milk route salesmen everywhere, are truly representative of a cross-section of our population and, in most instances, have accomplished more in life than their average customer.

We often wonder if dairies are doing everything possible to get this point across to their customers.

More and more throughout the land dairies seem to realize that, as Secretary of Agriculture Benson has said, a better job of selling must be done. It is encouraging to report that in many sections dairies are not only urging their producers to get behind the expanded ADA program, but the dairies, too, are planning better advertising campaigns.

Out in northern California, the Redwood Empire Dairies, serving Fortuna, Arcata and Eureka, are launching an intensive promotional and advertising program. Twenty-eight producers furnishing milk to the three dairies have formed the Redwood Empire Producers Association and have named Adrian Chapin, Ferndale, permanent chairman. The group is supporting the program of the Redwood Empire Dairies and in order to get a well-rounded advertising campaign under way has retained the services of the Bert Wood Advertising Agency of Eureka, Calif.



Built for the Job!

Whenever milk is under refrigeration, United Cases save money. Open wire construction permits rapid cooling with better temperature control. For dairies turning to refrigeration from plant to consumer, impressive savings can be made.

COOLING TIME CUT

Savings begin in the cooling room where 10% to 20% can be cut from cooling time. Milk held over night in open wire cases averages 2°to 6°cooler by morning as compared to solid sided cases. Why spend up to ⅓ of your time cooling the case instead of the milk.

TRUCK REFRIGERATION

Carry these savings to your refrigerated trucks. The milk and case start out cooler and reduce the load on your truck system. United Cases are delivering milk at the required temperature in refrigerated trucks as far as 200 miles from the bottling point. These companies capitalize on refrigerated delivery by using the case that's built for the job.

GET THESE ADVANTAGES

Lower refrigeration costs, low initial case cost, fewer replacements (as low as 10% per year), better sanitation.

UNITED STEEL AND WIRE CO.
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Branch Plant: Wilkes-Barre, Pa.

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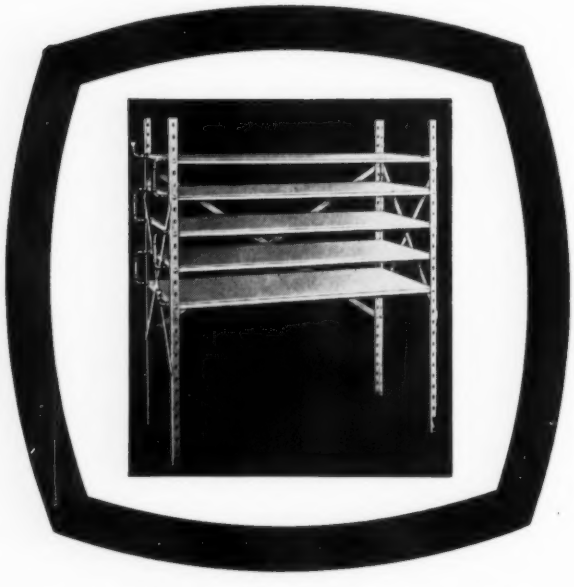

QUICK FREEZE

For Better Quality and Flavor!

Installation of DOLE **QUICK FREEZE PLATES** assures exceptionally fast freezing in the manufacture of ice cream. The result is better flavor and texture, with controlled hardness during cold storage until time of delivery. DOLE **QUICK FREEZE PLATES** are available in various sizes, ready to be set up in the freeze room.

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COMING EVENTS

International Association of Milk and Food Sanitarians—Annual Meeting, September 1-3 at Michigan State College, East Lansing.

University of Florida Dairy Field Day—September 10-11. Cooperating organizations include Florida Dairy Industry Association and Florida Retail Equipment Association. DHIA Dairy Awards and Honor diplomas will be presented at the banquet. Contact E. L. Fouts, Head, Department of Dairy Science, Gainesville.

Wisconsin Milk Sanitarians Association—Annual Meeting, September 14 at the Loraine Hotel, Madison. Contact W. L. Brown, Secretary, State Department of Agriculture, Madison.

Dairy Suppliers' Foundation, Inc.—Meeting, September 16-17, at the Blackstone Hotel, Chicago, Ill.

National Association of Dairy Equipment Manufacturers—Meeting, September 16-18 at the French Lick Springs Hotel, French Lick, Ind.

New York State Association of Milk Sanitarians—Dairy Industry Conference, September 21-23 at the Hotel Syracuse, Syracuse.

Dairy Plant Operators Conference—September 24-26, at University of Florida. Co-sponsor is Florida Dairy Industry Association. Contact E. L. Fouts, Head, Department of Dairy Science, Gainesville.

International Dairy Show—October 10-17 at International Amphitheatre, Chicago.

North Dakota Dairy Industries Association—Annual Meeting, October 13-15 at the Gardner Hotel, Fargo.

New Jersey Milk Industry Association, Inc.—Annual Convention, October 15-16 at Hotel Berkeley-Carteret, Asbury Park.

Vermont Dairy Plant Operators and Milk Distributors—Annual Conference, October 21-22. Contact Prof. Alec Bradford, Dairy Manufactures, University of Vermont, Burlington.

Milk Institute—Sponsored by The Children's Hospital of Philadelphia, October 23. New trends in medical and technological developments.

International Association of Ice Cream Manufacturers—Annual Convention, October 25-30 at the Hotel Statler, Boston, Mass.

Milk Industry Foundation—Annual Convention, week of October 25-31, at the Sheraton-Plaza Hotel, Boston, Mass.

International Dairy Equipment Exposition—November 3-11 in Paris, France. Contact Prof. E. Lancelot, Societe Pour L'Equipement des Industries Laitieres et Agricoles, 16 Rue Chauveau-Lagarde, Paris.

National Milk Producers Federation—Annual Convention, November 8-12 at the Rice Hotel, Houston.

Refrigeration and Air Conditioning Exposition—November 9-12 at the Public Auditorium, Cleveland, Ohio. For hotel reservations, contact Housing Bureau, Cleveland Convention Bureau, Terminal Tower, Cleveland.

National Hotel Exposition—November 9-13 at the Kingsbridge Armory, New York City.

New York State Milk Distributors—Annual Convention, November 10-11 at the Mark Twain Hotel, Elmira.

Washington State Dairy Foundation—Annual Meeting, November 16-18 at the Davenport Hotel, Spokane.

South Carolina Dairy Association—Annual Meeting, November 18-19 at the Francis Marion Hotel, Charleston.

Dairy Industries Society, International—Annual Meeting, November 20 at the Statler Hotel, Washington. Write to 1108 Sixteenth St., N.W., Washington 6.

Kansas Ice Cream and Milk Institute—Annual Meeting, November 29-December 1 at Kansas City. Contact Dale M. Bryant, Secretary, 1004 Brown Bldg., Wichita 2.

Western States Dairy Convention—Regional Meeting, December 6-8 at the Cosmopolitan Hotel, Denver, Colo.

Wisconsin Milk Dealers Association—Annual Meeting, December 8-10 at the Schroeder Hotel, Milwaukee.

SHORT COURSES

Milk Industry Foundation — 1625 Eye St., N. W., Washington 6, D. C.
Sales Training Institutes—September 14-25; October 5-16; November 9-20; November 30-December 11.
Special Merchandising Course—September 28-October 2. In collaboration with University of Wisconsin.

Cornell University — Contact Prof. Leigh H. Harden, Roberts Hall, Ithaca, N. Y.
Dairy Industry Course—1 year course, beginning third week of September. Includes elementary dairy industry, dairy plant equipment, bacteriology, milk production and processing, marketing and business management, etc.

University of Maryland—Contact W. S. Arbuckle, Prof. of Dairy Manufacturing, College of Agriculture, College Park, Md.
Ice Cream Short Course—January 18-28.

University of Minnesota — Contact Office of Agricultural Short Courses, Institute of Agriculture, St. Paul 1.
Dairy Products Institute—September 16-18. Program: butter and ice cream; concentrated, canned and dry milk, and market milk; and fieldmen's conference, respectively, on successive days.

Pennsylvania State College—Contact A. Leland Beam, Director of Short Courses, School of Agriculture, State College, Pa.

Ice Cream Course for Dairy Equipment and Supply Men — December 7-12. Ice cream manufacturing, including composition of ice cream, standardization, calculation, processing, freezing, overrun, etc. Registration fee $12.25 (residents of state); $17.25 (non-residents).
Testing Milk, Cream and Dairy Products — January 4-9. Licensing examination at end of course by Milk Control Commission representative. This course will not be given unless 10 or more persons have registered by December 22. Fee $10.25 (residents); $15.25 (non-residents).
Ice Cream Course for Plant Men—January 11-23. Regular course in ice cream making. Registration fee $18.75 (residents); $28.75 (non-residents).
Market Milk and Milk Supervision—January 25-February 6. Babcock testers license examination at end of course. This course will not be given unless 10 or more persons have registered by January 18. Registration fee $18.75 (residents); $28.75 (non-residents).

Texas Technological College — Contact J. J. Willingham, Head, Department of Dairy Manufactures, Lubbock.
Dairy Manufactures Short Course — November 18-20. Lectures and demonstrations on milk, ice cream, butter, cheese and cottage cheese.

University of Wisconsin—Contact J. Frank Wilkinson, Director, Short Courses, 108 Agricultural Hall, Madison.
Dairy Manufacturing—October 5-November 14. Market milk, ice cream, condensed milk products, butter making, and cheese making.

●

QUALITY CHEKD REGIONAL CONFERENCES

A series of thirteen regional conferences for Quality Chekd Association members started September 1, Managing Director Harlie Zimmerman announced.

Eight ice cream and five milk sessions will cover newest development in ice cream and dairy products marketing, as well as the presentation of the 1954 Quality Chekd advertising and merchandising programs.

The opening conference is scheduled for Waterloo, Iowa on September 1. Succeeding meetings will be held in Minneapolis, Oshkosh, Cleveland, New York City, Cincinnati, Dallas, with the final meetings set for Chicago on September 29 and 30.

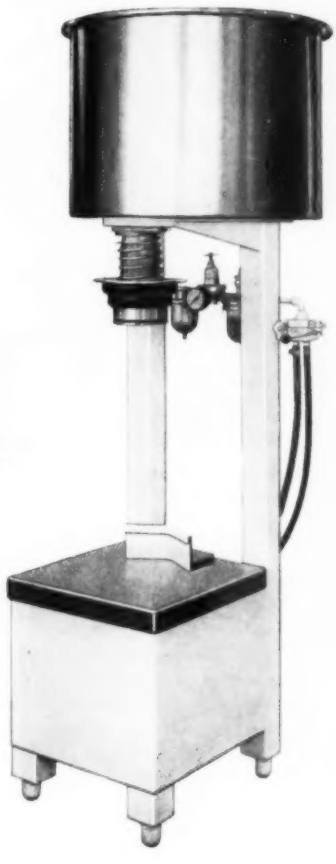
Directing the Quality Chekd conferences will be Harlie F. Zimmerman, Association managing director,

Fort Wayne Can Filler

AIR OPERATED

APPROVED METHOD OF FILLING

CLEAN FAST FILLING



FILLS 5, 8 AND 10 GALLON CANS WITH 6⅛" OR 7¼" NECKS

UNILEVEL DRIP PROOF VALVE — FILLS ALL CANS TO THE SAME LEVEL

STAINLESS STEEL FLOAT INLET VALVE — DISCHARGES AT THE BOTTOM OF THE TANK TO PREVENT FOAMING

SIMPLE — RUGGED — EASY TO CLEAN AND OPERATE

Manufactured By

Fort Wayne Dairy Equipment Co.

Winter Street and Wabash Railroad
Fort Wayne, Ind.

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XUM

Cuts maintenance costs 4ways
Steelcote
Damp-Tex
Gloss White
Based on the experience of more than 9600 industrial plants, *improved* DAMP-TEX proves less expensive in actual usage. Shutdowns to dry out wet walls and equipment are reduced or eliminated. Greater coverage, superior hiding qualities and resistance to moisture, steam, 2% caustic, corrosive acids, gases and other industrial conditions, assures longer life. DAMP-TEX adheres to any paintable interior wet or dry surface—dries to a beautiful porcelain-like finish. Will not taint foods.
Write for descriptive folder E
FUNGUS TEST
STEAM TEST
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WET
OR DRY SURFACE ENAMEL
NEW
STAINLESS STEEL COATING
For equipment and metal surfaces subjected to extreme acid and alkali conditions. Brush or spray costs less than 4c sq. ft. Write for information. Folder E.
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THE CREAMERY PACKAGE MFG. CO.

National Dist. of Damp-Tex Products to the Dairy Industry
GENERAL OFFICE: 1243 W. Washington Blvd., Chicago
Also sold in Canada: Creamery Package Mfg. Co. of Canada, Ltd., 267 King St. W., Toronto 2, Ontario
Canadian Manufacturer: Standard Paint & Varnish Co., Windsor, Canada

Tom Maynard and Stan Morgan, field representatives and C. E. Hentrich, account supervisor of Campbell-Mithun, Inc.

Mr. Zimmerman stated, "Quality Chekd ice cream sales are 6.8% over last year's. Quality Chekd members' performance, compared to the industry average in the states where members operate, shows that Quality Chekd members as a group are 6.0% above industry average. On a nationwide industry comparison, Quality Chekd members as a group are 4.8% above the average."

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MILK INSTITUTE SCHEDULED FOR OCTOBER

The Children's Hospital of Philadelphia Is Host Preceding Boston Convention

"Homogenized Vitamin D Milk and Human Health—An Appraisal of Present Knowledge and Future Possibilities" will be the subject of a one-day Institute to be held at the Barclay Hotel in Philadelphia, October 23, under the auspices of The Milk Research Laboratory of The Children's Hospital of Philadelphia.

The General Advisory Committee is headed by Dr. F. Bruce Baldwin, Jr., Chairman, and by Henry N. Woolman and Henry Jeffers, Honorary Chairman. Speakers and their topics are:

History of the Development of Homogenized and Vitamin D Milks in the United States—Dr. F. Bruce Baldwin., Jr., Vice-President, Abbotts Dairies, Inc., Philadelphia.

Changes in the Physico-Chemical Characteristics of Milk as the Result of Homogenization—Dr. Francis J. Doan, Professor of Dairy Manufactures, The Pennsylvania State College, State College, Pa.

Heat and Quality—The Nutritional Aspects of Pasteurization, Boiling, Autoclaving and Terminal Sterilization—H. E. O. Heineman, Research Director, Pet Milk Company, St. Louis, Mo.

The Child Drinks Milk. Physiologic Concepts of Digestion—Dr. Irving J. Wolman, The Milk Research Laboratory of The Children's Hospital of Philadelphia.

A Quart of Milk a Day. Cow's Milk as a Source of Childhood Nutrition—Dr. James R. Wilson, Secretary, The Council on Foods and Nutrition of The American Medical Association.

The Theory and Practice of Vitamin D Fortification of Milk—Dr. Kenneth G. Weckel, Professor of Dairy and Food Industries, University of Wisconsin, Madison, Wis.

The Disappearance of Rickets. Vitamin D Milk as Related to Mineral Nutrition—Dr. Harold Edward Harrison, Pediatrician-in-Chief, Baltimore City Hospital, Baltimore, Md.

Laboratory Evaluation and Control of Homogenized and Vitamin D Milk—Dr. Bernhard Spur, Milk Research Laboratory of The Children's Hospital of Philadelphia.

Improving the Nutritional Quality of Cow's Milk—Recent Advances and New Directions—Dr. Conrad A. Elvehjem, Chairman, Department of Bio-chemistry, University of Wisconsin, Madison, Wis.

PRODUCER LEADERS MEET WITH EISENHOWER AND BENSON

"Progress is being made in the dairy industry in establishing a 'self-help' program," a group of the nation's dairy leaders reported to President Eisenhower and Secretary Benson at a Washington meeting in July.

Merrill N. Warnick, president of the association, who acted as spokesman for the group, said both the President and the Secretary were "gratified" to hear of progress being made in the industry. Secretary Benson, Mr. Warnick said, also offered the aid of his department in helping the dairymen solve their problems.

Mr. Warnick told the President of the expanded program the American Dairy Association launched at its meeting last March, and at which the Secretary spoke. Mr. Warnick pointed out that it is the dairy farmers themselves who finance this promotion work.

Seated: President Eisenhower and Merrill Warnick, President of ADA and Chairman of Secretary Benson's Task Force Committee on Agriculture.

Standing (left to right): Milo Swanton, Secretary of Wisconsin Council of Agriculture, and Member of President's Advisory Committee on Agriculture; Charles W. Holman, Executive Secretary, National Milk Producers Federation; Ralph Zeuthen, ADA; W. P. Davis, President, National Milk Producers Federation; Secretary of Agriculture Ezra Taft Benson; Lester J. Will, Manager, ADA; Tres Goetting, ADA (partly hidden); and Don Coleman, Public Relations Director, ADA.

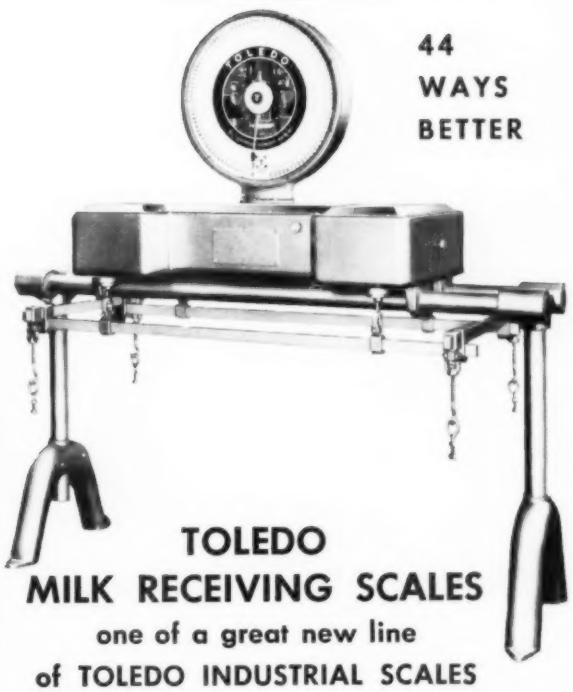
Earlier in the day, the same group had met with the Secretary in his office and received in more detail the development of a "self-help" program. The Secretary went with the group to the White House.

Following the meetings, the dairy leaders met with the press at a conference in the Department of Agriculture building. Mr. Will was moderator of the hour and a half long conference.

"The meeting with the chief executive of this country, the progress report to the Secretary, and the press conference mark the start of a new phase of the public relations program of the dairy farmers," said Mr. Will. "First, we wanted to report to the government what the dairy farmers are accomplishing; now, we shall report to the press and the public."

Mr. Will outlined a program in which the dairy industry leaders now will make this report to editors, editorial writers, commentators, columnists, and others in a nationwide tour. Editorial conferences are to be held early this fall in New York, Chicago, St. Louis, Minneapolis-St. Paul, and other key areas, Mr. Will said.

new



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VERSATILE—adaptable for wide or narrow tanks!

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It was a humdinger

That's what many milk dealers told us about the series of articles in the June issue of **The American Milk Review.**

But one man complained because there were too many good articles.

He couldn't find time to read them all!

We wonder how many did not take time to read and **re-read** one of the most important articles in that June issue: Secretary of Agriculture Benson's statement.

"It is my contention that there is no real surplus of dairy products," Secretary Benson stated, adding, "the problem is one of under-consumption rather than over-production."

He also stated: "So far as educational and sales promotion work is concerned, the dairy industry is in a fortunate position because it has a product that is second to none from the standpoint of nutrition and wholesomeness. Nutritionists say it is difficult to plan a well-balanced diet with less than five quarts of milk (or its equivalent in milk products) per person each week. Yet, studies show that nearly half of our people consume less than this."

To have a real merchandising program, milk dealers must be devoting a sizeable portion of their advertising budget to educating their present retail customers to use more milk and more by-products.

Our **biggest little newspaper in the world,** which a large number of milk companies throughout the country have been using for the past four years, is a most effective way of doing this.

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BULK HANDLING ACTIVITY IN COLORADO

Colorado dairymen took a look at bulk handling when H. H. Spiegel, Assistant Sales Manager, Tank Division of The Heil Co., Milwaukee, Wis., addressed a group of dairymen on the farm pick-up method of collecting milk.

The meeting was the first of its kind to be held in Colorado. Interest and enthusiasm in the farm pick-up operation was high and it was revealed that the system would be inaugurated in the Colorado area soon.

Colorado dairymen present at the meeting in the Cosmopolitan Hotel included: Reinhold Ehrlich, Ehrlich Truck Line, Windsor; Kenneth Martin, Martin Truck Lines, LaSalle; Herb Kraft, LaSalle Milk Plant, LaSalle; Carl J. Yeager, Beatrice Foods Co., LaSalle; W. E. Ankeny, Denio Milk Route, Eaton; and Harold Evans, Garden Farm Dairy; W. A. Henry, Thermo Supply, Inc.; Fred L. Huelt, Denver Milk Producers; Bill Phelps, Royal Crest Dairy; Merl Gillmore, Carlson Frink Co.; A. L. Robinson, Dairies Service Co.; J. E. Dolan and O. J. Wiemann, Colorado Dept. of Health; Ted P. Stockman, Glenn Leggett, and Byrne M. Wright, Beatrice Foods Co.; and Ed Chamberlin and Floyd J. Gregarek, Denver Dept. of Health.

●

JOHN BRANDT MEMORIAL FOUNDATION ESTABLISHED

A memorial foundation in memory of the late John Brandt "to provide grants for research in production, improvement, marketing and utilization of milk and its products" has been established.

Organization of the foundation was made in the interests of the entire field of dairying to inspire more healthful and economical dairy products for the consumer through constant experimentation, the founding group emphasized.

Instrumental in initiating plans for the foundation has been a Litchfield, Minn., group of Mr. Brandt's friends and associates. Mr. Brandt maintained Litchfield as his legal residence throughout his lifetime.

Pledges of this group have already reached $17,000 which has been set up in a trust fund. Donations for the fund are being received by Irving J. Clinton, secretary, Litchfield, Minn.

●

DAIRY QUEEN ASSOCIATION GETS HARVARD INVITATION

Harvard University's Graduate School of Business Administration has invited the Dairy Queen National Trade Association to present their case history as a practical text to their retail operations study. In their invitation the Harvard Business School stated, "We believe the rapid expansion of Dairy Queen outlets might provide a very worthwhile case."

The Harvard Business School teaches by means of actual case histories and is trying to bring to their student body the leaders in all facets of business.

This type of industry-educational cooperation is part of a growing trend to a practical approach to education, with less emphasis on pure semantics.

CANCO BUILDS NEW CONTAINER PLANT ON WEST COAST

A new fibre milk container manufacturing unit is being installed by American Can Company in its can-making plant at Stockton, Calif., the company announced.

The new Stockton unit and the milk container-making plant now under construction at Needham, Mass. will bring to eleven the number of Canco fibre milk container manufacturing units throughout the country, the company said. The two new units are expected to begin operation next year.

●

NATIONAL DAIRY NET IS UP

Net profit after taxes of National Dairy Products Corporation was $15,253,833 for the first six months of this year compared with $14,671,741 for the same period of 1952, E. E. Stewart, president, announced recently.

The company's earnings for the half year represent a profit after taxes of $2.31 a share, compared with $2.29 a share for the first half of 1952.

Dollar sales and tonnage were both up to new record highs for the first six months of 1953. Dollar sales totaled $612,457,490 for the period, an increase of $51,931,804 compared with $560,525,686 for the 1952 half-year.

Provision for Federal and Canadian taxes on income was up to $26,676,000 as against $22,811,320 for the corresponding period last year. Provision for Federal taxes on income for the first six months of 1952 was computed in accordance with the provision determined for the full year of 1952; the provision for the first six months of 1953 was computed in accordance with existing tax laws.

Mr. Stewart also announced that the directors had declared a quarterly dividend of 75c a share, payable September 10 to stockholders of record on August 20. This is the company's 119th consecutive quarterly cash dividend.

●

CREAMERIES OF AMERICA AND BEATRICE FOODS MERGE

At special meetings held in July, stockholders of Beatrice Foods Co. and Creameries of America, Inc. approved a plan whereby Creameries of America merged into Beatrice Foods Co., effective August 1.

Under the terms of the merger, holders of Creameries common stock will receive one share of new $100 par 4½ per cent preferred stock and one share of Beatrice common stock in exchange for eight shares of Creameries common stock.

Creameries of America's earnings for the six months ended June 30 are up 18 per cent after taxes. This compares favorably with Beatrice Foods.

No estimate of the earnings of the combined companies is possible, Mr. Karnes said, because each company has a different reporting period.

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CASH IN ON NEW TREND

Now is the time to prepare for trend from home delivery to retail store sales, reported by dairy authorities. Develop and strengthen retail sales outlets now by installing Freez-Rite Dairy Display Cabinets.

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MINNESOTA RATIFIES ADA SET-ASIDE POLICY

The Minnesota Dairy Industry Committee adopted the plan which calls for an ADA set-aside every month of the year at the rate of 2 cents per hundredweight of milk delivered at the dairy plants, or one-half cent per pound of butterfat.

For several years, Minnesota dairy farmers have set aside a penny per pound of butterfat during May and June. The new year-around ADA set-aside program is expected to become effective in Minnesota January 1, 1954. This action brings the totals to 24.5 per cent of the nation's total milk supply now ratified under this ADA set-aside plan.

Some other states participating are Washington, Wisconsin, Alabama, Colorado, Wyoming and Minnesota.

●

F. W. FRALEY, DIAMOND ALKALI OFFICIAL, RETIRES

Fred W. Fraley retired July 1 as a vice-president of Diamond Alkali Company. He had previously resigned as a director of the company.

Mr. Faley's 25-year career with Diamond began in 1928 as Manager of Diamond's Southwest Sales Office in Houston, Texas. In 1943 he became vice-president of sales, and has served as a director since 1947. Mr. Fraley recently served with the National Production Authority under the "loan" plan whereby industry executives are recruited for temporary periods.

●

INDIANA DPA TO COMBINE TOUR AND BOSTON MEETINGS

Indiana Dairy Products Association has announced that they are sponsoring an excursion to the annual meetings in Boston of the Milk Industry Foundation and the International Association of Ice Cream Manufacturers. According to Carl Hottenstein, President of the Indiana Dairy Products Association, plans call for a 9-day trip starting in Indianapolis October 15 and terminating in Boston, to include stops and side trips at Niagara Falls, Montreal, Quebec, a trip around Gaspe Peninsula including stops at Matane, Perce and Bangor.

Total trip, Indianapolis to Boston and back, covering transportation and lodging (no meals) is being offered at $210.00 per person. C. Winfield Hunt, Secretary of the Milk Foundation of Indianapolis, has made all arrangements and will be in charge of the tour.

●

CODE FOR MEASURING MILK IN FARM TANKS

(Continued from Page 48)

tee as feeling that the charts used in connection with farm milk tanks should show quantities in terms of "pounds" in lieu of "gallons" or, at least the charts should show both "gallons" and "pounds." Your Committee does not agree with this suggestion. In the first place, a farm milk tank is not a weighing device. It would be impossible for a weights and measures official truthfully to certify that one of these units will deliver a given number of "pounds." The specific gravity of milk varies; therefore, 231 cubic inches of milk will not, in all instances, weigh the same. Your Committee feels that these devices should be certified by weights and measures officials as volumetric measuring devices only. They should insist that the official charts, which bear the official seal of approval of the weights and measures department,

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contain quantity values in "gallons" only. If the buyer and seller choose to convert "gallons" to "pounds" by using an arbitrary conversion figure, this they should do under private contract. It is not necessary to show "pounds" on the chart approved by the weights and measures official for this to be accomplished.

Opposed to Measuring Tank Milk by Weight

The matter of showing weight, rather than volume, on the chart has another very important significance. For many years industry, as well as State legislatures, has assigned arbitrary equivalents to certain quantity units. A good example of this is the very unsatisfactory system of weights per bushel and barrel of various commodities. The National Conference for many years has had a standing Committee on Trading by Weight. The principal project of this Committee has been to encourage the repeal of various States statutes establishing weights per bushel for commodities. They have been trying to encourage the grain industry to abandon the term "bushel" and buy and sell grain strictly on a "pound" basis. Your Committee feels that to recognize the inclusion of pounds on these milk tank charts would be encouraging the same practice that we have been striving for years to eliminate. In most of the other instances, the process has been in reverse to that suggested here. The quantity actually is determined by weight, and then the weight is converted to volume, using an arbitrarily agreed upon conversion factor. In this instance, we actually would determine the quantity volumetrically and then would convert "volume" to "pounds." One process is as bad as the other, and they both tend toward confusion. Your Committee is firmly convinced that the "gallon" should be a volumetric quantity of 231 cubic inches, and that the "pound" should consist of 16 avoirdupois ounces (7,000 grains). We do not feel that weights and measures officials should lend any encouragement to further confusion between existing quantitative terms.

It is evident that milk was sold by the "gallon" long before it was sold by the "pound." Furthermore, all retail sales of milk and fluid milk products continue to be made by volume. Your Committee sees no reason why the dairy industry could not revert to the purchase and sale of milk on a volumetric basis when these farm milk tanks are used; that is, when the quantity actually is determined by volumetric measurement. This can be done, and your Committee is of the opinion that weights and measures officials throughout the country should encourage the dairy industry to adopt this policy. It is understandable that, when scales came into use in the dairy industry for determining the quantity of milk, the purchases should be changed from a "gallonage basis" to a "poundage basis." This was a proper change, and your Committee commends the dairy industry for having made it. Now that the industry is going back to the volumetric method of measurement, at least in the purchase of a sizable quantity of milk, your Committee suggests that the 38th National Conference go on record as recommending to the dairy industry that they buy and sell milk by the "gallon" when the quantity is determined by "volumetric measurement," and that they buy and sell milk by the "pound" when the quantity is determined by "weighing."

INDUSTRY PROBLEMS

(Continued from Page 62)

side unless the pipette is rinsed into the test bottle.

In calculating the weights of milk and cream to be mixed, we prefer the Pearson's Square method. In case you may not be familiar with it, I am quoting it from the Dairy Science Laboratory Manual of B. L. Herrington of this department. Incidentally, all ingredients should be weighed in making up the mixture, and you should not depend on volumes. This latter is another possible source of your trouble.

"Standardization problems can be solved in two steps. First, calculate the relative amounts (the ratio) in which the high and low test ingredients must be mixed to secure the desired test. Second, determine the actual amounts which must be mixed to satisfy the conditions of the problem.

"These steps may be performed algebraically. The tests of each ingredient may be indicated by the symbol % with the subscripts H, L, or M to indicate whether it is the test of the high test, the low test, or the mixed material. The symbol W with the same subscripts will indicate weight. Since the weight of the fat in the mixture must be equal to the sum of the weights of fat in the components,

$$\%_H \cdot W_H + \%_L \cdot W_L = \%_M \cdot (W_H + W_L)$$

$$= \%_M \cdot W_H + \%_M \cdot W_L$$

REARRANGING

$$W_H(\%_H - \%_M) = W_L(\%_M - \%_L)$$

$$\frac{W_H}{W_L} = \frac{(\%_M - \%_L)}{(\%_H - \%_M)}$$

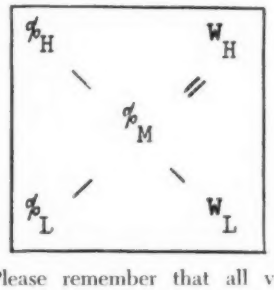
This last equation can be solved for $\frac{W_H}{W_L}$, the ratio in which the materials must be mixed, by inserting the known values of percentage. If the problem specifies a known value for W_H or W_L, the weight of the other ingredient may be calculated by substituting the known weight and the percentages in the equation. If a specified weight of mixture must be prepared, the value of W_H can be calculated by changing the equations as follows:

$$\frac{W_H}{W_H + W_L} = \frac{\%_M - \%_L}{(\%_H - \%_M) + (\%_M - \%_L)}$$

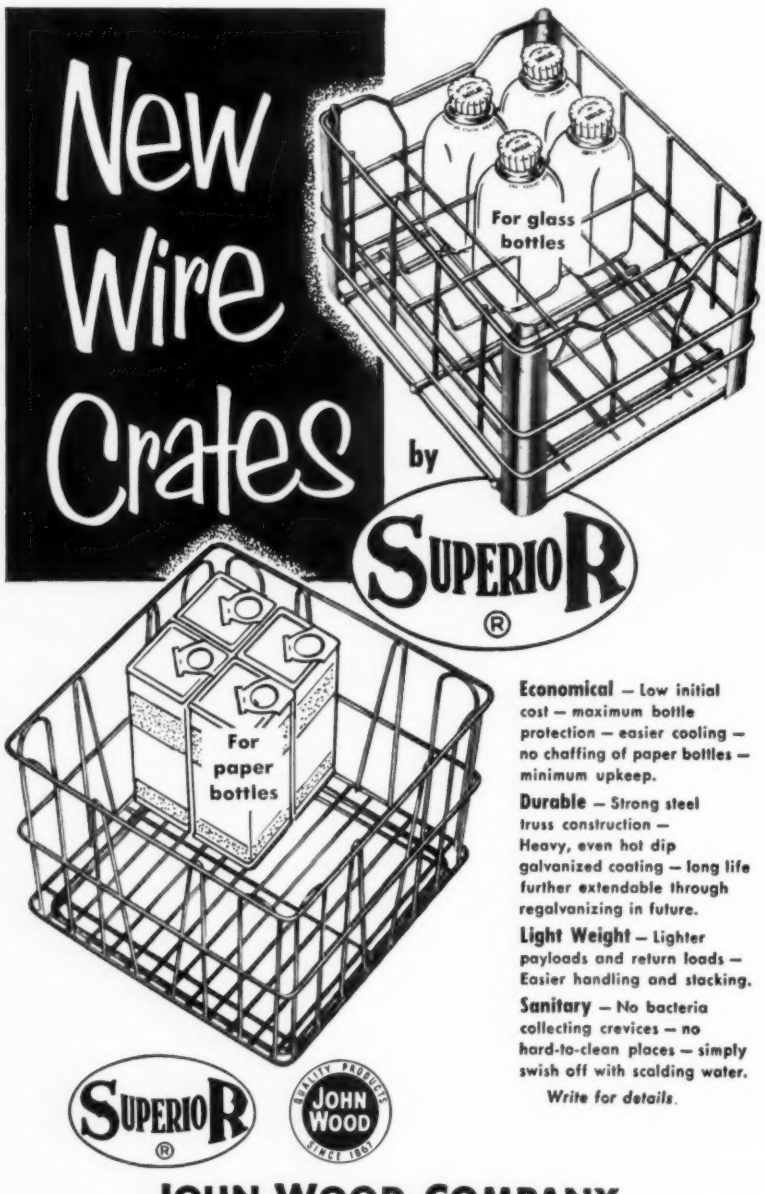
$$\frac{W_H}{W_M} = \frac{(\%_M - \%_L)}{(\%_H - \%_L)}$$

the value of W_L can be obtained by difference.

"Pearson's Square is a mechanical device to help remember the equations above. It may be written as shown below, using the same symbols as before.



"Please remember that all values on the top line refer to the high test ingredient; all values on the lower line refer to the low test ingredient. Note, also, that the percentage values of the starting materials are at the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left, the percentage of the mixture is at the middle. Since these values are always known in standardization problems, they should be inserted in place of the symbols. The weights on the right are not known, but they can be calculated by means of the 'equations' on the diagonals:

$$\%_H - \%_M = W_H$$

$$\%_L - \%_M = W_L$$

"The second diagonal actually gives a negative value. The negative sign should be ignored. The calculated values of W_H, W_L and of $(W_H + W_L)$ are relative values only. They can be used in proportion equations to determine the actual amounts needed in any given case where one weight is known."

●

HEAD OF SUPPLY FIRM PASSES

Christian Petersen, for 55 years a prominent figure in the Southern New England dairy business, died in Hartford, Connecticut on July 20, 1953. He was the founder of the dairy equipment and supply firm that bears his name.

Mr. Petersen was born in Denmark on November 2, 1880. He came to this country as an immigrant boy in 1898. For the first few years he worked on dairy farms. In 1901 he bought a milk business and began producing and delivering milk. He started the equipment business as a sideline in 1914. The firm grew steadily until it became the principal business activity.

Mr. Petersen had a wide range of interests. He participated in local politics and served a term as Street Board Commissioner in Hartford. He later became president of the Board.

He was possessed of a great fondness for farm animals, particularly horses. During his life he owned several fine harness horses.

Mr. Petersen was a man of great courage and energy. A real optimist, he enjoyed people and made it a point to help anyone he could who was interested in helping himself.

The business, Christian Petersen & Sons, has been operated for the past few years by his sons.

BEN H. BRIGGS DIES

Ben H. Briggs, First Vice-President of the Mid-West Bottle Cap Co., Belvidere, Illinois, died suddenly of a heart attack July 26 while vacationing in Canada.

Mr. Briggs, a past president of the Illinois Dairy Boosters Association, became associated with the company as a salesman in Chicago in 1930. He rose to sales manager in 1944 and became a company officer in 1950.

He was also active in the Dairy Industries Supply Association.

HEADS PENNA. ASSOCIATION CONVENTION COMMITTEE

Appointment of William S. Lenker as chairman of the 1954 Pennsylvania Association of Milk Dealers' convention committee has been announced by Henry R. Geisinger, executive vice-president of the state organization.

Mr. Lenker will head a committee composed of various milk dealers from the Harrisburg vicinity.

Close to 500 members of the statewide association are expected to attend the May 4-5 convention, at the Penn Harris Hotel in Harrisburg.

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When you compare the results of ordinary cleansers and Anchor Alkali—you instantly see the big difference! No doubt the product you are now using gives clean, sterile bottles—but with Anchor Alkali—bottles *gleam* and *glisten* with *crystal clearness!* So if you want absolute cleanliness plus *sparkling brightness* . . . without specks . . . spots . . . or dulling film—make Anchor Alkali your first choice. Today—run a test and see for yourself the advantages of using *only Anchor Alkali!*

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BROOKS JAKEMAN

AL J. MARTONE

FRED W. DRENK, JR.

DONALD E. MOOK

J. B. May—Southern Dairies, Inc.

J. B. May has been appointed a member of the Board of Directors of Southern Dairies, Inc.

Mr. May has been associated with the company since 1931, when he was employed in the general offices in Washington, D. C. as an accountant. Later, he was promoted to be comptroller of the company, a position he has held for the past fourteen years.

Brooks Jakeman — Cherry-Burrell Corp.

Appointment of Brooks Jakeman as manager of the newly established Northeast District was announced by John Cherry, president of Cherry-Burrell Corporation. Mr. Jakeman, formerly manager of the company's New York branch, will make his headquarters in Boston.

Previously, branches at New York City, Syracuse and Boston have operated entirely independently in their territories. The Northeast District plan will integrate the sales, engineering, service and inventory operations of the three branches and their areas of responsibility.

Al J. Martone—G. P. Gundlach & Co.

Al J. Martone is now West Coast sales manager for G. P. Gundlach & Company. Mr. Martone will administer the Gundlach sales and service program for milk, ice cream and dairy products firms in the Pacific Coast and adjacent interior mountain states, with headquarters at 3665 Lomina Avenue, Lakewood, California.

Fred W. Drenk, Jr.—Robert A. Johnston Co.

Fred W. Drenk, Jr., has been named general sales manager of the Chocolate and Cocoa Division of the Robert A. Johnston Co., according to an announcement from E. C. Johnston, company president.

John Hansen—Klenzade Products, Inc.

Klenzade Products, Inc. announces that John Hansen, former supervisor of Klenzade's Field Quality Division, is the new district manager for the Denver, Colo. office. He succeeds Kenneth Bowman.

Mr. Hansen plans to make his permanent headquarters at Boulder, Colo.

Donald E. Mook—Borden Co.

Appointment of Donald E. Mook as director of the Borden Company's New Products Research Laboratory has been announced by Harry A. Ross, vice-president of the company. Mr. Mook succeeds Dr. Frank L. Seymour-Jones, who died July 2.

Mr. Mook joined the New Products Research Laboratory in New York upon its formation in 1941. He was appointed assistant director in 1945.

Vernon C. Morrison—Krim-Ko Corporation

The company announces the appointment of Vernon C. Morrison as Assistant Divisional Manager for Division No. 4, at Madison, Wis.

Mr. Morrison was with the Borden Company's LaCrosse and Madison plants and then was Sales Manager of the Borden-Hammond operation.

Gilbert H. Kegerreis—Krim-Ko Corporation

The company announces the appointment of Gilbert H. Kegerreis as Divisional Sales Manager for Krim-Ko Corp. Division No. 5, which consists of a portion of Southern Illinois and Indiana, Missouri, Arkansas, Kansas, Oklahoma, and Colorado.

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Muckle MANUFACTURING CO.
OWATONNA, 12, MINN.

Thomas J. Meagher—Sealright Co., Inc.

R. Reid McNamara, general sales manager of Sealright Co., Inc., announces the appointment of Thomas J. Meagher as New England manager for the company and manager of the Sealright Boston office in the Statler Building.

Mr. Meagher, although a comparatively young man, has been with Sealright for 28 years. He has had an outstanding record as Sealright representative in the Canton, Akron, Youngstown and Steubenville, Ohio, and Wheeling, W. Va. territory. Prior to that, Mr. Meagher organized and supervised the sales office at the Sealright Kansas City, Kansas, factor.

Mr. Meagher succeeds Flavel W. Payne who has been placed in charge of a new Sealright sales division consisting of Maine, New Hampshire and Vermont with central headquarters at the Sealright Boston office.

Mr. Meagher will be succeeded in the northeastern Ohio-northern spur of West Virginia sales territory by Ronald G. Smith of Kent, Ohio.

CHAS. E. LAWRENCE

EDW. J. BARNHART

C. E. Lawrence—G. P. Gundlach & Co.

C. E. Lawrence, who is director of the Dairy Manufacturing Research Bureau of the Gundlach organization, has been elected a member of the board of directors, according to an announcement by G. P. Gundlach, president of the company.

Edward J. Barnhart—G. P. Gundlach & Co.

Edward J. Barnhart, who has been employed by the Gundlach organization for 14 years serving as an account executive for the western Ohio, Indiana and Louisville, Kentucky area, has been elected vice-president in charge of sales.

Harry J. Weber—G. P. Gundlach & Co.

Appointment of Harry J. Weber as account executive in the western Ohio, Indiana and metropolitan Louisville area was announced by G. P. Gundlach, president of the firm.

Eric G. Larson—G. P. Gundlach & Co.

Eric G. Larson has been appointed an account executive with G. P. Gundlach & Co., according to G. P. Gundlach, president. He succeeds William McKinney who resigned to join the staff of the National Dairy Council.

Mr. Larson will serve milk, ice cream and dairy plant operators in New York State, New Jersey, and New England.

John W. Greve—Paterson Parchment Paper Co.

E. R. Leonhard, president of the Paterson Parchment Paper Company of Bristol Township, Pennsylvania, has announced the appointment of John W. Greve as Manager of the company's Waxed Paper Division. Mr. Greve joined Paterson in 1950 and has assisted in the development of waxed paper sales since that time.

WHEN PUMPS WEAR OUT..WHO IS AT FAULT!

CHECK IN-PLANT SERVICING

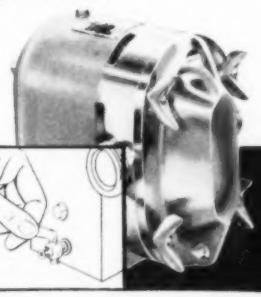
One of many Waukesha Pump "Life-Savers," this simple petcock can add *months* to pump service! Use it to drain condensate from your pump every time you clean it — daily.

It's *important!* If you leave condensate in your pump, you saponify the oil . . . Your oil loses its lubricating value, and you have rapid wear on the ball bearings, causing misalignment of shaft — resulting in excessive wear on impellers and pump body. Shorter pump life, early repair and need for replacement!

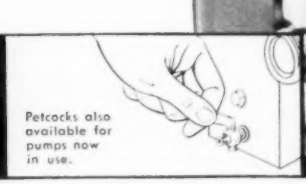
SAVE YOUR PUMP . . . Make the "Petcock-Check" *every day.* Let it drain until the oil runs clear. Then check the oil level; add oil to fill — of the recommended type and viscosity. It's good "life insurance." Saves money — and new pump investment.

WAUKESHA P.D.* Sanitary Pumps are built for long life! Every detail in their design and construction confirms this. Service-conscious owners prove it every day, every year. That's why you'll find *more* Waukesha Pumps in use today for quality protection of all types of products, liquid, semi-liquid, creamy or chunky. Prove it yourself — write for latest Instruction Manual — or complete catalog.

*P.D. — Positive Displacement, slow speed



WAUKESHA FOUNDRY CO.
WAUKESHA, WISCONSIN



Waukesha 100% SANITARY PUMPS

Dependable Product of a Responsible Manufacturer

XUM

MAHLON BEAKES

ALBERT SMITH

LESTER H. COURTNEY

E. J. HUMPHREY

Mahlon Beakes — Cherry-Burrell Corp.

Mahlon Beakes, Cherry-Burrell Sales Representative, has been made Manager of their New York City Branch. Beakes' father started the Beakes Dairy Company, which was one of the larger milk companies in the early 1900's, finally becoming a part of the Dairymen's League.

He majored in agriculture and dairying at Cornell and with his family dairy background and sales experience is considered well qualified for the New York City branch management job.

Albert Smith—Dixie Cup Co.

The Dixie Cup Company announces the appointment of Albert Smith as its National Sales Manager of Water Cups, Transportation and Governmental Sales. His headquarters are at Easton, Pa.

Mr. Smith was Manager of the New York Division of the Vortex Cup Company when it merged with the Dixie Cup Company in 1936 and has been with Dixie ever since.

Lester H. Courtney—Herman Body Company.

Lester H. Courtney has been named General Manager of the Herman Body Co. to succeed Herman Plew who retired on June 30. Mr. Courtney has served the Herman Body Company since 1937.

E. J. Humphrey — M. Yundt Co.

E. J. Humphrey was named Sales Manager for bottling machinery by Michael Yundt Co. of Waukesha, Wis. He will direct the marketing of Michael Yundt bottle washers, pasteurizers, bottling machines and caustic filtering systems.

Mr. Humphrey joined Michael Yundt as an area representative last October.

THATCHER OPENS DETROIT OFFICE

Robert H. Scully will be the Detroit representative for the McKee Glass Division, while Bruce Sutton will continue to represent Thatcher's Container Division, at the new Thatcher Glass Mfg. Co. office at 149 Michigan Ave., Detroit 26, Mich.

Keith Max—Robert Gair Co., Inc.

Norman F. Greenway, Vice-President in charge of the folding carton division, has announced the appointment of Dr. Keith Max as his assistant in charge of the paperboard production of the folding carton division. His headquarters will be at the general offices of the company in New York.

Dr. Max came to the Gair Company in 1943, and since 1949 has been assistant technical director of the company's research department.

William H. Caddoo — Robert Gair Co., Inc.

Herman Whitmore, vice-president in charge of boxboard operations at Robert Gair Company, Inc. announced that as of August 10, 1953, William H. Caddoo became his assistant with the title of Assistant to the Vice-President. His headquarters are in the New York office of the boxboard division.

Mr. Caddoo had been a division manager for three years at the company's Thames River plant, New London, Connecticut.

PRODUCTION COSTS CUT, RESULTS IMPROVED, WITH

FLAV-O-LAC FLAKES

the guaranteed culture for fermented Milk Products Uniform Aroma, Smoothness and Flavor.

A DIVISION OF DALARE ASSOCIATES

New Cheddar Cheese Culture Flav-O-Lac Flakes S. durans $2.00 (plus postage)

THE DAIRY LABORATORIES
PHILADELPHIA 3, PA.
Branches • New York, Baltimore, Washington

FOR TOP QUALITY COTTAGE CHEESE

1. Use a Culture made especially for Cottage Cheese. F-L LACTIC ACID FERMENT CULTURE is "tops."
2. Use a proven Coagulator in a 2 to 5 hour set. F-L COAGULATOR does this job superbly.

This combination will save you time and money and will satisfy your most discriminating customers.

Write today

FLAVOR-LINE, INC.
845 S. Wabash Ave. Chicago 5, Ill.

Earl J. Phillips—Sterling Electric Motors, Inc.

Earl J. Phillips has been appointed District Manager of the new Sterling Electric Motors, Inc. sales office in Chicago.

Mr. Phillips was formerly with U. S. Electric Motors, Inc. and with Foote Brothers Gear and Machine Corp.

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BOWMAN NEW COLORADO DPA EXECUTIVE SECRETARY

Kenneth Bowman, for many years district manager for Klenzade Products at Denver, recently became executive secretary of the Colorado Dairy Products Association.

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STERLING ELECTRIC OPENS CHICAGO SALES OFFICE

Sterling Electric Motors, Inc. recently announced the opening of a new sales office at 1927 No. Harlem Ave., Chicago 35, Ill. Earl J. Phillips has been appointed District Manager.

The Chicago territory was formerly served by Schrade-Batterson & Co. on a representative basis.

FOREMOST ADVANCES VANDERPOOL AND WATERS

H. Ray Vanderpool, manager of the Foremost Dairies, Inc. in the San Antonio market area, has been promoted to assistant district manager for all of South Texas, with headquarters at Houston.

Mr. Vanderpool will be succeeded in San Antonio by W. E. Waters of Dallas, heretofore vice-president in charge of sales for Tennessee Dairies, another subsidiary of Foremost Dairies.

●

TWO NEW NDC STAFF MEMBERS ANNOUNCED

Two new National Dairy Council staff members are Peter E. May and William B. McKinney.

Mr. May became Head of the Department of Affiliated Unit Service on August 10, replacing Miss Elizabeth Sullivan. He was Executive Assistant to the Head of the Wisconsin Council on Agriculture Cooperative.

Mr. McKinney joined the staff of NDC on August 10 as Eastern Regional Representative, replacing E. M. Harmon who has accepted a U. S. Government position. Mr. Harmon will go to Iran to direct the establishment of a dairy industry in that country under auspices of the United States' Point Four program.

Mr. McKinney is a graduate of Ohio State University in Dairy Technology. His dairy experience embraces work with milk producers, dairy plant operations, and dairy sales promotion and public relations. He comes to NDC having resigned his former position as Account Executive, Northeast Area, for G. P. Gundlach and Co.

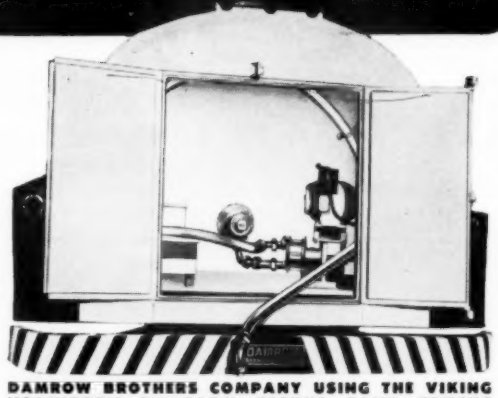
●

FAIRMONT PROMOTES SCHEER AND SLOAN

Two branch production manager changes were announced recently by Fairmont Foods Company of Omaha, Nebraska.

Ralph A. Scheer, formerly production manager at the Grand Island, Nebraska branch, has been transferred to Moorhead, Minnesota as production manager. Lawrence D. Sloan, milk department foreman at Grand Island since last March, was promoted to Mr. Scheer's position at Grand Island.

More and More Are Choosing THE VIKING "SANITOR"!



DAMROW BROTHERS COMPANY USING THE VIKING "SANITOR" ON FARM PICKUP TANK TRUCKS

The smooth, positive delivery of Viking Sanitor pumps assures complete product protection.
Units take up less space, weigh less and include completely 3A approved pump made of solid dairy metal with simple o-ring seal for fast, complete cleaning.

Any mounting arrangement available.

For more information, write for bulletin E100L today.

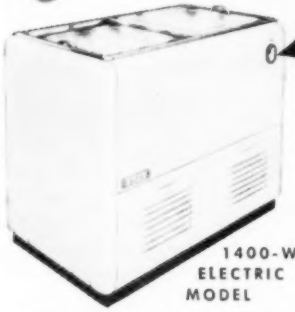
VIKING AN HONORED NAME IN PUMPING

See Our Catalog In SWEETS

Viking Pump Company Cedar Falls, Iowa

QuiKold Beverage Coolers

SELL FASTER... SELL EASIER... SELL MORE!



1400-WD ELECTRIC MODEL

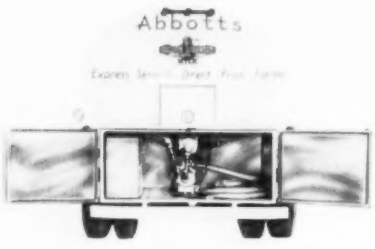
BIG LINE OF ICE AND ELECTRIC—WET OR DRY MODELS

S&S Products, Inc.
P. O. BOX 1047 ★ LIMA, OHIO

STANDARD OF QUALITY FOR OVER 26 YEARS!

XUM

USING OUR SEPARATOR

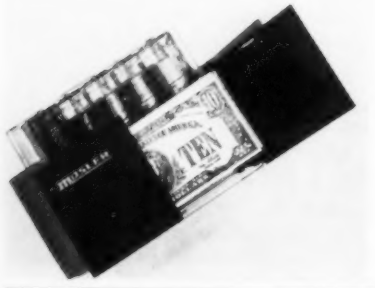


Receiving Room on Wheels

A BULK MILK TANKER that is a complete "receiving room on wheels" is being furnished by Mojonnier Bros. Co. To insure high-speed milk transfer at farm and plant, a 70 gpm centrifugal pump is used. In addition to speeding pickup, the centrifugal pump can be cleaned speedily, weighs less and is practically jam proof.

The same pump used for pickup can also be used at the dairy to agitate the milk through a by-pass hook-up, standard on all units.

Heavily insulated and completely streamlined, Mojonnier Bulk Milk Tankers are made in sizes from 500 to 5000 gallons. Literature will be furnished promptly on request by Mojonnier Bros. Co., 4601 W. Ohio St., Chicago 44, Ill.

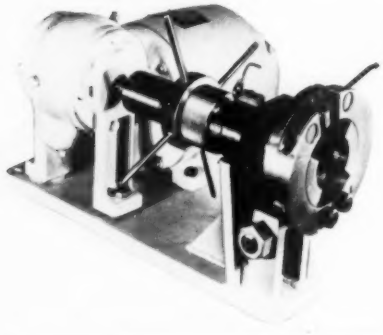


Visual Change Box

COUNT-KWIK, a transparent plastic change box designed to speed up the counting of coins, also has a removable top compartment large enough to hold up to 30 bills. Paper money is kept flat by the container's black plastic hinged covers.

Now being introduced by the Mosler Safe Company, the unit's bottom compartment is designed to hold separate rows of pennies, nickels, dimes, and quarters. Graduated markings enable the user to count all the coins at a glance. Price $3.50.

Mosler Safe Company, 320 Fifth Ave., New York, N. Y.



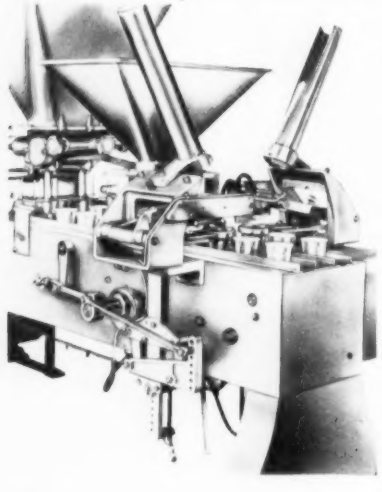
Conversion Tool

BECAUSE many processors desire to convert their present "take-down" lines to permanent lines, Tri-Clover Machine Co. has designed its Super Speed Conversion Tool, available in the hand-operated model or motor-driven model, illustrated.

The tool is designed for fast, easy conversion of bevel seat, sanitary fittings to close fitting, leak-tight gasket seat joints. The converted fittings use a special Hycar gasket which is self-positioning, smooth, non-toxic, fat-resistant, non-absorbent, and can be sanitized by steam at 250°.

Present lines can be converted to "cleaned-in-place" lines in the plant progressively and used as take-down lines during the changeover.

For further information on this new development write Tri-Clover Machine Co., Kenosha, Wisconsin for Bulletin Nos. 1353 and 5-153.



All-Purpose Vacuum Capper

NOW ONE vacuum capper replaces previous methods of using several capping heads for different capping operations. It is said to handle all cups and lids normally used for cottage cheese, sour cream, and ice cream filling.

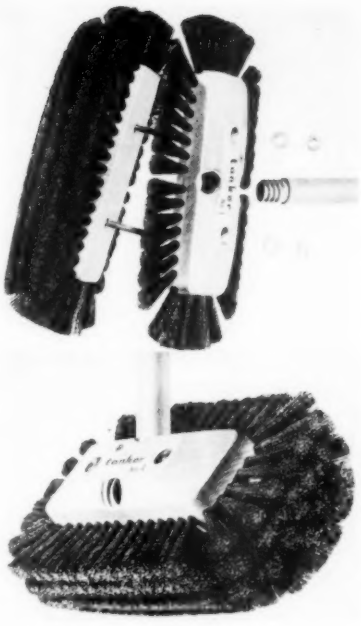
This new Triangle-Bagby Vacuum Capper permits complete changeover from any style or size lid to another very rapidly. The necessary changeovers require only a simple exchange of two small parts, and adjustment to cup height by a crank mechanism.

The increased efficiency of the Vacuum Capper is due to the fact that cup jamming and content-spilling are eliminated through simplified mechanism and the elimination of a rising table at the capper station.

The Vacuum Action, with positive pick-up, also eliminates jamming due to lid variations.

Another advantage claimed is that the capper never touches the underside of the lid and therefore never contacts the product.

Complete information about this new Triangle-Bagby development can be obtained from the Triangle Package Machinery Company, Chicago.



Tank Truck Brush

LONG-HANDLED BRUSH, designed to clean out farm tanks, tank trucks, steel drums and deep vats of all kinds is made by Ox Fibre Brush Co. Called the Oxco *tanker*, the 10½″ long by 6″ wide brush-head, that easily fits the average pail or bucket, has an all-around scrubbing face to clean out rounded corners and other hard-to-get-at spots in deep, rounded tanks and storage containers. The hardwood brush-head is in 2 pieces. The top piece is replaceable at small cost, insuring continuous economical service of the main brush-head.

The brush is available in three different filling materials to provide for scrubbing and cleaning all types of dirt. The No. 1 *tanker* is filled with long-wearing, stiff crimped black nylon; No. 2 with tough, durable, genuine palmetto fibre, and No. 3 with a Union mixture of palmyra, bassine and tampico.

Information on the brush can be obtained from jobbers or direct from Ox Fibre Brush Co., Frederick, Md.

●

Milk Vending Machine

SINGLE AND DOUBLE vending machines which handle single quarts, half gallons, and two quarts sales are made by the Refrigeration Engineering Co. at Montgomery, Minn. A bulletin describing these vendors is available free on request.

Sediment Tester

A patented BULK TANK MILK SEDIMENT TESTER, designated as the L/W Model 40, is the length (40″) for convenient and easy bulk tank testing. According to the manufacturer its tubular plunger rod combines durable construction with light weight, and its butterfat-resistant neoprene plunger assures trouble-free performance. It is reported to operate faster, and to deliver an accurate 16-ounce measurement every time.

The L/W Model 40 comes fully equipped with the L/W Tru-Hold Disc Retainer and Protect-O-Can Head. For further information, write to the Langsenkamp-Wheeler Dairy Supply Division, 1266 Shelby St., Indianapolis 3, Ind.

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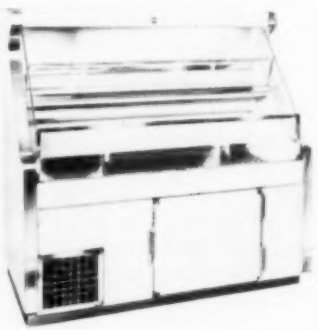
Display Case

A COMPACT self-service refrigerated display case known as the Bally Servicold 60, is built to get maximum display of dairy products in minimum floorspace.



The main shelf holds 108 quarts of milk or 70 cartons of eggs. A refrigerated mezzanine shelf displays 54 pints or 28 cartons of eggs. The refrigerated compartment in the lower section contains 124 quarts of milk.

Installation consists of placing case in position and plugging to nearest outlet. Equipped with 1/3 h.p. noise-free hermetic condensing unit operated by a capillary tube.

This case is built by Bally Case and Cooler Co., Bally, Pa.

Custom-Built Milk Tanks

PLANTS with limited storage space for liquids will be interested in a new bulletin just issued by Cherry-Burrell Corporation. Among the many custom-built stainless steel storage tanks illustrated are single shell, insulated, refrigerated and heated tanks, both rectangular and cylindrical. Many accessories such as air agitators, mechanical agitators, peepholes and automatic level indicators are depicted. Also included in the 4-page bulletin are tables of typical tank dimensions.

A copy of Bulletin G-479 can be obtained by writing to Cherry-Burrell Corporation, Dept. AS-7, 427 W. Randolph St., Chicago 6, Ill.

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Milk Shaker

MADE OF lustrex plastic in bright red, yellow and black color combination, the Rocket Shaker is an inexpensive promotion with striking eye-appeal. Soap and water keeps it clean and sanitary.

Other promotional items in the same line include Thermoware tumblers and Moon-Glo bowls.

Write to Mallory-Randall Corp. at 84-86 Clifton Place, Brooklyn 38, N. Y. for details.

XUM

Matter of Fact
BY EDWARD A JOSEPH
FRENCH HOUSEWIVES ARE ASKING FOR A "SLICE OF MILK" INSTEAD OF A BOTTLE
CHEMISTS AND AN INVENTOR HAVE FOUND A SYSTEM OF CONGEALING MILK SO IT CAN BE KEPT IN A REFRIGERATOR FOR SEVERAL MONTHS
WHEN REQUIRED FOR USE, THE SLICE OF MILK IS PLACED IN A BOWL AND IN HALF AN HOUR WILL LIQUIFY
THE COUNTRY OF LIECHTENSTEIN HAS MORE COWS THAN VOTERS
5,295 AGAINST 3,285
THERE ARE ABOUT 186 COWS FOR EVERY 1000 PERSONS IN THE UNITED STATES
SAP OF THE MACARANDUBA TREE
FOUND IN THE AMAZON COUNTRY OF BRAZIL IS USED AS A DRINK AND IS SAID TO BE "AS GOOD AS MILK"
IT CONTAINS 34% BUTTERFAT, 4% SUGAR, 4% MINERALS AND 48% WATER

3-A SANITARY STANDARDS FOR FARM TANKS

(Continued from Page 54)

source of agitation will not vary more than plus or minus 0.1 per cent butterfat throughout the capacity volume.

The agitating device shall be readily cleanable, with all parts constructed so visible inspection can be made from the outside of tank, and shall be one of the following types:

(a) Nonremovable Type: Nonremovable agitator directly connected to motor shaft shall be readily cleanable, with all parts constructed so visible inspection can be made from the outside of the tank, and shall be provided with at least 1 inch space between bottom of inside lining and the nearest point of the agitator blade, except when agitator is hinged with cover. All interior angles of the agitator blades shall have radii of ¼ inch or more. The opening through bridge or fixed cover shall be provided with a 1 inch minimum annular brush cleaning space between shaft and inside surface opening. Inside surface of this opening shall not exceed ¾ inch in vertical depth. Opening shall be protected against dust, oil, insects and other contamination.

(b) Removable Type: Agitator shaft shall be provided with easily accessible, readily demountable coupling of either the sanitary type located inside the tank, or coupling located outside of tank provided same is installed above the protection furnished for shaft opening into tank. All surfaces of bottom support shall be visible when agitator shaft is removed, and bottom support shall not interfere with proper drainage of tank. The opening through bridge or fixed cover shall be provided with a 1 inch minimum annular brush cleaning space between shaft and inside surface opening. Opening shall be protected against dust, oil, insects and other contamination.

(c) Horizontal Agitators: Shaft shall be provided with sanitary type rotary seal and shall be demountable for cleaning.

(d) Air Agitators: When compressed air is used for agitation of the product, the air shall be processed to remove dust, insects, all extraneous material and objectionable odors, and shall be conveyed to the milk in sanitary piping from a point above the milk surface. The piping used to convey the air shall be designed to prevent siphoning or back flow of milk into air system.

14. *Cooling:* Farm Cooling Tanks equipped with either direct expansion or refrigerated water cooling surface shall be furnished with sufficient cooling surface in tank and sized freon refrigerating unit, when testing at 90° ambient temperature for air cooled condensing units, or 120 lb. head pressure for water cooled units, to cool as follows:

(a) Tanks used for everyday pick-up shall cool 50 per cent of the rated volume of the tank containing raw milk, from 90° to 50° F. in one hour after the tank has been filled to 50 per cent of its capacity, with compressor in operation during filling period. Unit then to cool above volume from 50° to 40° F., in one hour.

(b) Tanks used for every other day pick-up shall cool 25 per cent of the rated volume of the tank containing raw milk, from 90° to 50° F. in one hour after the tank has been filled to 25 per cent of its volume, with compressor in operation during filling period. Unit then to cool above volume from 50° to 40° F. in one hour.

(c) Water may be substituted for milk when testing (a) or (b) above. For test purposes a maximum filling period of 1½ hours is permissible, the water being added in not less than 5 equal amounts at equal intervals.

(d) When compressor is permanently attached to farm tank, such tank shall be clearly and permanently identified when specifically designed only for every other day pick-up.

(e) The tank shall be provided with automatic refrigerant control mechanism capable of holding the raw milk to within plus or minus 2° F., of the required holding temperature.

400 HOOSIERS TAKE TIME OUT FOR SUMMER JAMBOREE

The Annual Outing of the Indiana Dairy Products Association was held in July, at the Anderson Country Club in Anderson, Indiana. Approximately 400 registered for the annual event and participated in various activities.

The Boosters, captained by Tom Townsend, Pure Carbonic Co., Indianapolis, defeated the Industry team captained by Omer Montgomery, Kroger Co., Marion, Ind., in a hotly contested softball game.

In the Annual Golf Tournament the following men took home the top prizes. For Industry, 1st Low Net—C. W. Hoeppner, Beauty Brand Dairy, Ft. Wayne; 1st Low Gross—Tom Motter, Wyandotte Chemical Co., Ft. Wayne; C. L. Witham, Indiana Condensed Milk Co., Indianapolis. For the Boosters, top prizes were taken by George Parish, Barnett and Co., Indianapolis; 1st Low Gross—Russell Oberlies, Bessire and Co., Indianapolis; J. A. Crowley, Owens Illinois Glass Co., Indianapolis. E. J. Barnhart G. P. Gundlach Co., Cincinnati, Ohio, received a prize for the most swings.

Prize for the best fly casting was awarded to Luther Harris, Johnson Creamery Co., Bloomington, Ind. The champion horseshoe pitchers were Robert Byrkett, Milk Producers Auditing Agency, Indianapolis; Art Wilson, General Food Containers, Indianapolis; Bob Ohmart, Sunrise Dairies, Laketon, Ind., and H. G. Olson, Ft. Wayne Dairy Equipment Co., Ft. Wayne, Ind.

A new event this year was a croquet tournament which drew over 60 entries. Prize winners were as follows: 1st place Carroll Utterback, Penn Salt Chemical Co., Tipton, Ind.; 2nd place Wayne Post, Cherry-Burrell Corp.; 3rd place Harold Roberts, Wm. H. Roberts and Sons, Indianapolis; and 4th place Vernon Porter, Allen Dairy Products, Ft. Wayne, Ind.

Officers of the Indiana Dairy Products Association are: President Carl H. Hottenstein, American Dairy Co., Evansville, Ind.; Treasurer G. L. McFarland, Jr., Golden Guernsey Farms, Indianapolis; and Ward K. Holm, Executive Secretary. Officers of the Indiana Dairy Boosters Association are, President Glenn A. Johnson, Mid-West Bottle Cap Co., Belvidere, Illinois, and Secretary-Treasurer Russell F. Oberlies, Bessire and Company, Indianapolis.

NORTH CAROLINA DPA SETS UP $5,000 SCHOLARSHIP FUND

At a membership meeting of the North Carolina Dairy Products Association at Wrightsville Beach recently, the Association voted to set up a $5,000 scholarship fund at N. C. State College to be used over a three-year period to attract students of high calibre to the dairy manufacturing industry and to encourage them towards high standards of leadership.

Six scholarships providing $500.00 for two students in the freshman year, $300.00 for two students in their sophomore year, and $200.00 for two students in their junior year will be awarded on the basis of scholarship, leadership, interest, and need.

The freshman scholarships are open to residents of North Carolina who enroll as new freshmen in Dairy Manufacturing at N. C. State College in September, 1953. A committee from the Association with R. E. Tucker as Chairman and a committee from State College with Dr. W. M. Roberts as Chairman will screen the applicants.

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CALIFORNIA AWARDS FOUR SCHOLARSHIPS

Four two-year scholarships, each worth $1000, will be established this fall at three California agricultural colleges as result of the June 3 Dairy Industry program at Whittier High School, according to Wilson B. Woodburn, manager of the California Dairy Industry Advisory Board.

The awards, to be known as the "Bob Hope-California Dairy Industry" scholarships, will be made available to worthwhile California youths at Pierce Junior College in San Fernando Valley, California State Polytechnic College at San Luis Obispo, and the University of California at Davis.

Details for establishment of the scholarships were perfected at a series of meetings during the past week with industry leaders and officials of the three colleges. They will be effective at start of the fall semester and applicants are requested to contact the colleges directly.

Basic requirements for eligibility include the stipulation that recipients must be graduates of California high schools. Special screening processes for applicants will be established at the three colleges, with final recommendations being reviewed by an industry-wide committee.

XUM

NEW YORK MEN ACTIVE IN CONTROLLERS INSTITUTE

Albert G. Anderson of the General Ice Cream Corp., Schenectady, has been elected vice-president of the Albany Control of the Controllers Institute of America. In Syracuse, William C. Burtis, controller, Crowley's Milk Co., Inc., Binghamton, was similarly honored by the local controllers' group.

Among the directors elected by local Institute branches are H. I. Smith, treasurer, Dairymen's Ohio Farmers Milk Co., Cleveland, and Paul L. Scott, district controller, The Borden Company, San Francisco.

●

FAIRMONT FOODS PROMOTES THREE

Three promotions and a retirement have been announced by the Fairmont Foods Company, Omaha, Nebraska.

E. A. Wergin is the new branch manager of the Rapid City, South Dakota branch. Ronald E. Anderson will manage the Guthrie, Oklahoma plant. Maurice W. Coffin has been appointed senior auditor of the general office staff.

Otto H. Barnett, Fairmont manager at Rapid City, South Dakota, has retired. Mr. Barnett had been with the company more than 26 years.

Mr. Wergin joined Fairmont in 1944. He has been labor relations supervisor since 1950. Before that, he was travelling personnel supervisor. Before coming to Fairmont, he was with B. F. Goodrich Company and the Wage and Hour division of the U. S. Department of Labor. He assumed his new position July 1.

Mr. Anderson has been with Fairmont's Concordia, Kansas plant since 1931. He has been a territory manager the past two years. Before that he was Concordia office manager. He became Guthrie manager July 1.

E. A. WERGIN

Mr. Coffin joined Fairmont in 1923. He was most recently manager of the Guthrie plant, and before that managed the Lawton, Oklahoma branch. He became senior auditor August 1.

●

WISCONSIN REGULATIONS FOR BULK HANDLING

(Continued from Page 39)

C. Milk conducting facilities.

1. Milk may be conducted from the farm bulk tank to the transport tank by plastic type hose or other suitable hose or pipe provided that:
   a. The minimum inside diameter of the hose or pipe is 1¾ inches.
   b. No section of a milk conducting unit shall exceed 8 feet in length. The maximum length for each complete conducting unit shall not be greater than 16 feet.
   c. The sections shall be joined by use of sanitary type demountable fittings or permanent in-place type fittings which shall not be disconnected except for proper cleaning and/or for inspection.
   d. The fitting that attaches the hose or pipe to the farm bulk milk tank shall be protected with a sanitary cap to afford protection from contamination when not in use.

D. Unloading of milk—cleaning and sanitizing of tanks.

1. The unloading of milk from transport tanks shall be done at a place and in a manner which will prevent the possibility of contamination during such operations. The following minimum conditions shall be met:
   a. Unloading of milk from transport tanks shall be by the use of equipment as described for the removal of milk from farm tanks except that permission may be granted for the use of more than 16 feet of sanitary type pipe or approved flexible tubing.
   b. An unloading platform, preferably concrete, shall be provided with adequate drainage of waste materials.
2. Transport tanks shall be cleaned in the same manner as that previously described for farm milk handling equipment, except that it is recommended that sanitizing be by the spray method.

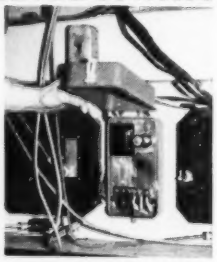
Lumenite Electronic

MILK LEVEL CONTROL

controls to within 1/100 inch the level of milk or mixtures in tanks, vats, pasteurizers, coolers, freezers, fillers, etc.

Absolutely accurate
Completely sanitary
Instantly cleaned
No moving parts
No floats

Saves Milk—Money—Time—Labor
Used by leading dairies, coast to coast.
Write for Bulletin L 140

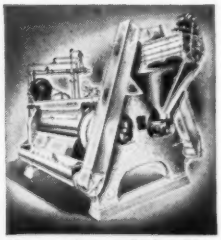


LUMENITE ELECTRONIC CO. 407 S. DEARBORN CHICAGO 5, ILL.

Better DRY MILK

AT LOWER COST

●●●



DRY MILK MACHINES
Built in Five Sizes

The Patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs. Complete details upon request

OVERTON MACHINE COMPANY

Dowagiac Michigan

3. Milk transport tanks shall be cleaned and bactericidally treated after each unloading of lower grade milk than "Grade A" when such tanks are to be next used for the transportation of "Grade A" milk.

4. Daily cleaning of transport tanks after unloading shall be permitted when milk of the same grade is transported on one day.

5. A tag designating the date, time, place, and name of operator shall be attached to each transport unit by the operator at the completion of each tank cleaning and sanitizing operation.

6. All fitttings used at the primary plant for transferring milk from transport tanks shall be kept off the floor. Provisions shall be made to store such equipment inside the primary plant on racks to be used specifically for that purpose.

VI. Restrictions on holding of milk at farms.

A. No milk may be held in the farm bulk tank for a period of time in excess of twenty-four hours before shipment to the primary plant.

VII. Permits.

A. Any milk dealer desiring to purchase or receive milk from dairy farms under the bulk storage and transport plan shall obtain a permit from the Dairy and Food Division of the State Department of Agriculture.

B. Permits shall be granted only after approval of plans of installations, equipment and procedures of operations. All such permits shall be subject to suspension or revocation as provided by law.

C. The acceptance of milk from unapproved producer installations shall be considered cause for revocation.

●

SAYERS AND GUIGNON NAMED BY DeKALB

Appointment of Bill Sayers and Robert V. Guignon to the sales force of DeKalb Commercial Body Corporation was announced recently by E. E. Miller, president of the firm.

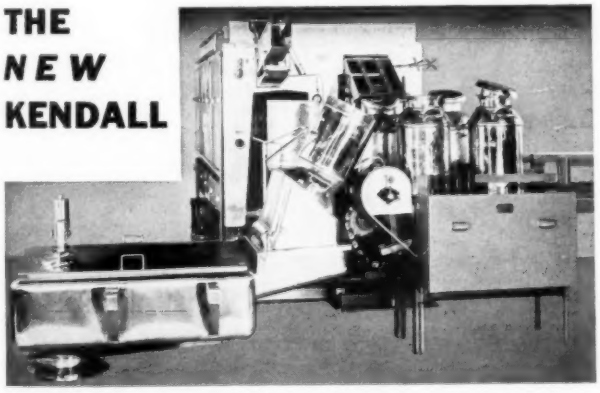
Mr. Sayers has been appointed Fleet Sales Manager. In addition he will be in charge of DeKalb's Chicago Sales Office, supervising fleet and dealer sales in the Chicago territory. He will operate out of DeKalb's Chicago office, 330 South Wells St., Chicago 6, Ill.

ROBERT V. GUIGNON

Mr. Sayers is well known throughout the field, having been connected with body sales during his entire business career except for a period during the war in which he served overseas with the 97th Infantry.

Mr. Guignon will act as Regional Sales Manager covering the South and Southwestern territory for DeKalb.

THE NEW KENDALL



RETURNLINE CAN WASHER

FEATURING A 150° DUMPING ARRANGEMENT

✓ THESE FEATURES

★ Partition separates cleaning from sterilizing stations.
★ Saves costly space.
★ Provides maximum visual inspection for incoming AND outgoing cans.
★ Eliminates necessity for separate reject conveyor.
★ Completely accessible for cleaning and adjusting.
★ All controls within easy reach.

KENDALL-LAMAR CORP.

POTSDAM, NEW YORK

When It Comes To Lubricating Your Entire System

THE FIRST 30 SECONDS COUNT MOST

Why?

If you're like most milk processing plants, you run water through your entire system before starting your milk through. This means that every day your pistons, pumps and all the mechanism in your system are subjected to water for 30 seconds or longer. When this happens, expensive working parts wear rapidly and maintenance costs increase—because their surfaces are not coated with a protective lubricant.

But when all the working parts in your system are thoroughly coated with the lubricant in the ORANGE TUBE (the lubricant that clings to metal even at 200° F.), damage from water washing of the parts is sharply reduced. Orange Solid Oil in tubes is pure, practically odorless, free from coliform bacteria, contains no animal or vegetable fats or fillers. And it stays bacteria and dust-free—always!

. . . and there's one sure way to get perfect lubricating protection — USE THE LUBRICANT IN THE ORANGE TUBE!

Used the country over for:

- Homogenizer Pistons
- Capper Head Guides
- Sanitary Valves
- Sanitary Seals
- Ammonia Valves
- Positive Action Pumps

ORDER TODAY!

$5.50 for 12 4 oz. tubes.

$3.00 for 6 4 oz. tubes.

F.O.B. Columbus, Ohio

McGlaughlin OIL COMPANY

3750 East Livingston Ave., Columbus 13, Ohio

WANTS AND FOR SALES

Classified Advertising Information

To ensure appearance of your ad in a given issue, copy should be in our hands by the 10th of the previous month (for instance, copy in March 10th for April issue). We cannot guarantee insertion of your ad in classified columns if copy is received after the above-mentioned date.

All Classified Advertisements, except Position Wanted

Lightface type—5c per word. ($1.00 minimum)
Boldface type—10c per word ($2.00 minimum)
Include name and address in word count, except for blind ads.

Position Wanted

Lightface type—first 50 words for 50c. Additional words 2c each.
Boldface type—first 50 words for $1.00. Additional words 4c each.
Include name and address in word count, except for blind ads.

Box Numbers — 25c additional charge in United States.
50c additional charge outside United States.
Do not include your name and address in word count.

No classified advertising will be accepted to run with borders or special spacing. All such advertisements are considered to be display ads, and will be billed as such. (Rates and mechanical requirements on request.)

All advertisements accepted in good faith. We cannot be responsible for reliability of ads. If you wish further information on advertiser, request references from him.

EQUIPMENT WANTED

THREE MILK TRAILER TANKS, approximately 4000 gal. each. Give full details.
Reply to Box 178, care of this publication. 9-M-53

100-gal. Cherry-Burrell PASTEURIZER with automatic controls, within 75-mile radius of the LUNDGREN & JONAITIS DAIRY FARMS, Shrewsbury, Mass. 9-M-53

MOJONNIER SOLIDS AND BUTTERFAT TESTER in good condition.
Reply to Box 181, care of this publication. 9-M-53

Lily Tulip, Continental SOUR CREAM or COTTAGE CHEESE CONTAINERS. Misprints and discontinued numbers.
Reply to Box 139, care of this publication. 9-M-53

WANTED FOR EXPORT

Spray Process Whole Milk Powder; 1-, 5-, and 25-lb. sizes. Carload shipments. Exclusive basis.

For more details, write to Export Inter-American Commerce, 154 West 65th St., New York 23, N. Y. TRafalgar 7-0502. 9-M-53

EQUIPMENT FOR SALE

Manton-Gaulin 400-gal. CGD Model HOMOGENIZER. Excellent condition, priced to sell.

Also Cherry-Burrell G-70 lefthand FILLER. Rebuilt less than 2 years ago, with 56 mm. Kleen Kap, Cover Cap, and Pull Cap Cappers, with Float. $650.

PENNSYLVANIA DAIRY SUPPLY CO., DOYLESTOWN, PA. 9-M-53

EQUIPMENT FOR SALE

FOR SALE: 3 BOILERS.

Locomotive type 65 h.p. oil burner, water pump fully automatic.

Hamburg upright 35 h.p. oil burner, water pump fully automatic.

Clayton generator, 75 h.p., like new.

Dietrich's Dairy, Inc., R. D. No. 2, Reading, Pa. 9-M-53

Mojonnier stainless steel Direct Expansion CABINET COOLER, 9,000 lbs. capacity. 12,000-lb. Sharples all stainless steel SEPARATOR. 100- to 300-gal. stainless steel PASTEURIZERS. 4,800 and 11,000 lb. SHORT TIME PASTEURIZERS.

Cemac 14-valve FILLER. Creamery Package PLATE COOLER, single section 58 plates. 6′ 24- and 36-tube SURFACE COOLERS with stainless steel covers. 4 c.p.m. and 6 c.p.m. ROTARY CAN WASHERS. Lathrop-Paulson 8 c.p.m. Straightaway CAN WASHER.

500- and 1,000-lb. stainless steel WEIGH CANS with Scales and Receiving Vats. 6,000- and 12,000-lb. DeLaval CLARIFIERS. 30 h.p. and 60 h.p. BOILERS.

1,000- to 4,000-gal. Glass-lined Tanks (by-products only). 32″x90″ Buflovak Double Drum MILK DRYERS. No. 250 Cherry-Burrell Icy-Flo SWEET WATER COOLER. Model A120 VANE CHURN, 370-lb. capacity.

Many other desirable items such as Fillers, Bottle Washers, Filters, Homogenizers, Freezers, Pumps, etc. Send us your inquiries.

LESTER KEHOE MACHINERY CORPORATION, 1 East 42nd St., New York 17, N. Y. 9-M-53

Milk Sampling The Easy Accurate Way
With *The SPENCER* Sampling Dipper
Designed for Milk Plant Sampling

- AUTOMATIC EMPTYING — Just rest the dipper bowl on the sample bottle, the precision ground valve opens, and the milk sample flows into the bottle. No tilting, dripping, spilling, or fuss.
- MEASURED SAMPLE — Precision manufactured for accuracy. 12 cc standard size with handles of 18″, 24″, 30″, or 36″. Other capacities and lengths made to order.
- EASY TO CLEAN — AND KEEP CLEAN — Highly polished to eliminate cracks and depressions where bacteria can accumulate. Three parts — easy to dismantle for cleaning.
- FULLY APPROVED — State and City Health Departments approved for milk plant testing. Used by testers all over U.S. and overseas.
- LIFETIME GUARANTEE — The Spencer Sampling Dipper is guaranteed for life against defective workmanship and materials.

"It Empties From The Bottom"

Prices and Shipping Information On Request

Harold S. Spencer Co.

Homer, N.Y. *"Manufacturers of Dripless Dippers"* Phone Homer 560

KEEP POSTED
BY MAIL--

The Producers' Price-Current, Subscription Edition, published every business day in the year except Saturdays, gives very full and accurate reports of the New York produce markets — eggs, poultry, butter, cheese, fruits, vegetables, etc. Recognized everywhere as the authority on current values. Subscribe at once and keep the paper on file for reference. Subscription rates on request.

URNER-BARRY COMPANY
Publishers
92 WARREN STREET NEW YORK 7, N. Y.

EQUIPMENT FOR SALE

Cherry-Burrell motors, ROTARY CAN WASHER, 3 c.p.m. New in 1951.

Cherry-Burrell Compak WEIGH CAN, complete with Fairbanks Scales. 450 lb. cap. New in 1947.

Two hundred 10-gal. MILK CANS.

This equipment for sale due to bulk pick-up. Available after Oct. 1st.

Bastian-Blessing 5-gal. COUNTER FREEZER with 60-gal. HARDENING CABINET. With 2 h.p. Universal compressor. Large freon Brunner Compressor, with 7½ h.p. motor.

GOSHEN FARMS DAIRY, 624 E. Jackson St., Goshen, Ind. 9-M-53

Two Cherry-Burrell 200-gal. stainless steel SPRAY VATS. Good condition.

Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 9-M-53

3x3 York Self-Contained COMPRESSOR. Complete with motor.

FAIRMONT FOODS CO., INC., 197 Scott St., Buffalo, N. Y. 9-M-53

REBUILT DAIRY MACHINERY. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 9-M-53

EQUIPMENT FOR SALE

ICE CREAM BODY, 620-gal., with plates and compressor. 84″ cab to axle dimension. Mounted on L-161 International. Body built by American Body of Oklahoma City. Will sell with or without truck. This is an excellent unit.

ULM 5 DIVCO 1948 with 2″ of insulation lined with galvanize. Enclosed milk compartment. This is ready to roll.

Also several 1948 and 1949 model UM DIVCOs with 2″ insulated milk compartments. These are all in use now, but we will release them as part of a regular replacement program.

Call or write BAKER TRUCK RENTAL, INC., 302 NO. OSAGE, WICHITA, KANS. 9-M-53

"THE PARTY BROKE UP AND THE CHILDREN HAVE ALL GONE TO THE MOVIE."

EQUIPMENT FOR SALE

CP27 ROTOMATIC FILLER. Dacro equipped. Good working order. $385.

Little Dutch Mill Dairy, Rochester, Minn. 9-M-53

Purity CAN WASHER. Heil 6-wide BOTTLE WASHER.

G100 Milwaukee FILLER. Cellophane HOODER, purchased 1950.

HOMOGENIZER, 400-gal. Cherry-Burrell PASTEURIZER, 200-gal.

SEPARATOR. CREAM COOLER, 6′.

Due to owner's death.

Keith's Dairy, 710 Fifteenth St., Altoona, Pa. 9-M-53

Cherry-Burrell 150-gal. PROCESSOR, $200. Wright 100-gal. PROCESSOR, $150. (Both stainless steel.)

Krauss, Hydro-Homogenizer, 350-gal., $500.

Smith-Lee HOODER, Type BH-40, $1,000.

Milwaukee FILLER, Model G7, capacity 36 to 40 bottles; with conveyor, $300.

Double SANITARY PIPE WASHER, complete, $100.

Wayne Dairy Products, Inc., Richmond, Ind. 9-M-53

The Swing Is To Bulk Milk Cooling

and FIRST CHOICE is → DARI-KOOL BULK MILK COOLERS

The Bulk Cooler that's 10 Years Ahead!

Milk is cooled rapidly to below 40° assuring a low bacteria count and better milk. Milk cans, and the resulting spillage, stickage and haulage losses are eliminated.

Units are ready to plug in — nothing else to buy.

Write Dept. C-5 for Complete Information

DAIRY EQUIPMENT COMPANY

1444 EAST WASHINGTON AVENUE • MADISON, WISCONSIN

Bu-Tyr-O

A Butter Fat Flavor Intensifier

★ FOR ACCENTUATING NATURAL BUTTER FAT FLAVOR AND AROMA IN BUTTER, SOUR CREAM, BUTTER MILK, ICE CREAM MIX AND OTHER DAIRY PRODUCTS.

CHANDLER LABORATORIES INC

EIGHTH STREET AND CHELTEN AVENUE

PHILADELPHIA 26 • PENNSYLVANIA

XUM

EQUIPMENT FOR SALE

Rebuilt No. 32 DeLaval SEPARATOR, stainless steel discs. 3 years old. Excellent condition.

Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 9-M-53

VISCOLIZERS and HOMOGENIZERS. Completely rebuilt and guaranteed, with late type stainless steel sanitary heads and pressure valves.

Also machines with standard valves. Send for bulletin and prices.

Otto Biefeld Co., Watertown, Wis. 9-M-53

Morpac Model TWO combined PRINT FORMING AND WRAPPING MACHINE for 1-lb. margarine prints measuring approximately 1½"x3⅜"x 6⅜" and a speed of 3,600 lbs. per hour. Powered with a 5 h.p., 220/440 volt, 3-phase, 60 cycle, 1750 r.p.m. Louis-Allis Splashproof Motor.

Morpac Model KWO CARTONING MACHINE, synchronized with Model TWO.

A. Ayres, E. F. Drew & Co., 416 Division St., Boonton, N. J. 9-M-53

One 320-can stainless steel MILK TANK, 2 years old.

One 405-can Heil stainless steel MILK TANK, 6 months old.

FAIR LAWN DAIRIES, INC., 5-01 River Rd., Fair Lawn, N. J. 9-M-53

Rebuilt 125-gal. (late model) CGD Manton - Gaulin HOMOGENIZER. Guaranteed.

Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 9-M-53

New model W-G 100 H.P. Clayton STEAM GENERATOR, Gas-Fired Boiler complete. This equipment has never been unpacked from original crating.

Write The Keagler Brick Company, P. O. Box 9, Steubenville, Ohio. 9-M-53

BUSINESS OPPORTUNITY

FOR SALE—The controlling stock in the largest dairy in central Wisconsin. Price $80,000. 1952 gross $311,000. Large trading area.

Reply to Box 170, care of this publication. 9-M-53

EQUIPMENT FOR SALE

STAINLESS STEEL 3,000-gal. MILK TANKS (5) for sale, with agitator and insulation, truck-rail demountable type.

PERRY EQUIPMENT CORP., 1409 No. 6th St., Philadelphia 22, Pa. 9-M-53

Please address replies to blind advertisements as follows:

Box .....

AMERICAN MILK REVIEW
92 Warren Street
New York 7, N. Y.

POSITION WANTED

A high calibre, wide-awake, agressive man with 30 years of experience in the wholesale and retail milk business (in the most competitive city in the U. S.) Well versed in all phases of milk and milk products. Desires position of responsibility, preferably in sales management.

Reply to Box 175, care of this publication. 9-M-53

HELP WANTED

Man Wanted, with dairy short course or college background, to train for plant manager's position in medium-sized plant operating all phases of the industry. Located in eastern New York. Replies confidential.

Reply to Box 141, care of this publication. 9-M-53

MANUFACTURERS AGENTS

Nationally advertised line of sanitary pumps, stainless steel fitting, valves, CIP fittings, filters, super-speed tools for the dairy, food, and beverage industries. Attractive commissions; full factory cooperation.

State experience, lines you are carrying, and territory covered. Confidential.

Reply to Box 176, care of this publication. 9-M-53

Man, between 28 and 35 years of age, with car, married, free to travel. Mechanical and electrical experience necessary. For installing dairy equipment.

Replies held confidential. Write, giving age, experience, references, and salary expected.

Box C818, 175 Fifth Ave., New York 10, N. Y. 9-M-53

HELP WANTED

Medium-sized plant in eastern Pennsylvania wants a WORKING PLANT MANAGER.

Full knowledge of all plant operations, including pasteurizing and bottling. Write fully, giving age, experience.

Reply to Box 180, care of this publication. 9-M-53

PLANT FOR SALE

Receiving Station in New York State, taking in 400 cans fluid milk daily. Approvals in New Jersey, New York, and Pennsylvania.

Reply to Box 177, care of this publication. 9-M-53

Up-to-date Fluid Milk Plant in excellent location in Central New York. Plant also equipped for manufacturing American cheese, butter, cottage cheese, buttermilk, etc. Approved for New York City and local markets.

Reply to Box 179, care of this publication. 9-M-53

Make Mine Chocolate!

Standardize the flavor of your CHOCOLATE ICE CREAM with

FORBES DRY MIX CHOCOLATE FLAVOR POWDER . . .

Simply add to plain mix before pasteurization or at freezer.

WATER-FREE • EASY TO USE • TEMPTINGLY TASTY

Write or wire for a FREE sample and compare it — or better still, send us a trial order.

Forbes

The BENJAMIN P. FORBES CO.

2000 WEST 14th ST. • CLEVELAND 13, OHIO

PLANT FOR SALE

DAIRY SUPPLY AND EQUIPMENT STORE and WAREHOUSE established 15 years, a going concern. Large territory now being covered, room for expansion. Near a fast-growing city. Store built 4 years ago.

March Farrington, 1435 Upper Front St., Binghamton, N. Y. 9-M-53

To settle estate. BUTTER, ICE CREAM, AND MILK PLANT, located in good county seat town in midwest. Only dairy in city.

Reply to Box 183, care of this publication. 9-M-53

FLAVORINGS

PURE tree-ripened LIME Juice, ORANGE Juice or TANGERINE Juice for Better Sherbets. Sample order, 12 Number 10 cans, any combination, only $15.00.

Write to Florida Canners, Inc., Eustis, Fla. 9-M-53

FOR SALE–Dairy ORANGE-ADE BASE, sweetened. Mixes one to six with water. No sugar needed. $1.60 per No. 10 tin. One can per case free for sampling. Write for sample.

Bradway Chocolate Company, New Castle, Ind. 9-M-53

Please address replies to blind advertisements as follows:

Box .....
AMERICAN MILK REVIEW
92 Warren Street
New York 7, N. Y.

FLAVORINGS

FOR SALE–Non-settling Chocolate Milk made from cold milk, no heat needed. Order a trial case, six No. 10 tins, Bradway Cold Mix Non-Settling Chocolate; or ask for free sample.

Bradway Chocolate Company, New Castle, Ind. 9-M-53

Dairy Grape-ade is profitable. Your total cost 9c per quart. Write for sample.

Bradway Chocolate Company, New Castle, Ind. 9-M-53

POSITION WANTED

Position wanted as WORKING FOREMAN in pasteurizing plant.

Can make Cottage Cheese, Butter, Milk, Sour Cream, Ice Cream Mix, and can Pasteurize Milk, Cream Test and Standardize. Over 20 years experience.

Write to A. C. Libby, Amenia, New York. 9-M-53

PRINTING SERVICE

2-in-1 Milk Carriers for Pyramid Bottles. Sturdy, folded, centers punched out. Your dairy printed on carriers. Dairies using this carrier show sharp increase in sales. Why sell 1 qt. when you can sell 2?

Load sheets – statements – daily reports – milk bills – milk tickets–route sheets–cash settlement sheets–envelopes, letterheads, etc.

Complete Printing Service. Prices and samples on request.

Vogue Printing Co., 2502 Avalon Ave., NE, Canton 5, Ohio. 9-M-53

SALES PROMOTION

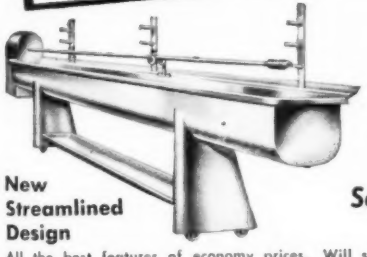
FOR SALE – Truck lettering and trademark decals made for your truck and store advertising. Easy to apply, uniform, distinctive, economical for small or large needs.

Write for catalog. Mathews Company, 827 South Harvey Ave., Oak Park, Ill. 9-M-53

SALES SLOW? WE MANUFACTURE AN INEXPENSIVE SALES PROMOTION ITEM THAT GIVES GUARANTEED RESULTS. NOTHING ELSE LIKE IT. INFORMATION FREE ON REQUEST.

THE HAMMOND COMPANY, FAIR BLUFF, NO. CAR. 9-M-53

STOELTING DAIRY EQUIPMENT



STOELTING SANITARY PIPE WASHER

Save $50 to $100

New Streamlined Design

All the best features of economy prices. Will save hours of cleaning time in your plant. Tank is made of 14 gauge heavy galvanized steel of all-welded construction, and is available in sizes of from 6' to 12' long, 11½" deep, and 11½" wide. Equipped with a ¼ h.p. motor with covered drive mechanism. Centrifugal water pressure pump forces the cleaning solution through the pipes and, in combination with the brush, effectively removes all residue, fats and milkstone, leaving a clean bacteria-free surface. A wood roller pipe rest protects the sanitary pipes from damage. Wide back apron. Designed for proper working height. Equipment can be purchased complete, or the tank only, or washing drive mechanism only for mounting on your own tank or table.

OTHER POPULAR STOELTING EQUIPMENT

"Flavorite" Pasteurizer, made in from 20 to 500 gallons in standard and deluxe models; stainless steel Intake and Weighing Equipment; New Stoelting Continuous Treatment Canwasher. Write us about your needs and let us prove that you'll be ahead by buying "Stoelting" equipment.

STOELTING BROTHERS CO.

Manufacturing Engineers for the Dairy Industries

KIEL -:- WISCONSIN

FREE!

SERVICE CAP

Paperlynen Caps are ADJUSTABLE to any headsize. Insure perfect fit. Light and comfortable. More ECONOMICAL. Reduce your present Cap expense by 50%. Distinctive with your special imprint. Millions used annually by nationally known companies. Just mail coupon below with manager's signature and we will send you absolutely **FREE,** a Patented Adjustable Paperlynen Service Cap.

PAPERLYNEN COMPANY
555 West Goodale St., Dept. E-9, Columbus, Ohio

Please send absolutely FREE, a Patented Adjustable Paperlynen Cap.

Firm Name_____

Address_____

City_____ State_____

Signature of Manager_____

Name of Paper Jobber most frequently patronized:

_____

XUM

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